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# RESULTS OF EARLY IDENTIFICATION AND GUIDANCE OF UNDERACHIEVERS.

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DIAGNOSTIC AND GUIDANCE PROCEDURES WERE STUDIED TO DETERMINE THEIR EFFECTIVENESS IN ALTERING OR IMPROVING THE DEVELOPMENT OF ELEMENTARY SCHOOL UNDERACHIEVERS. AN EARLIER GUIDANCE STUDY TESTED 1,078 BEGINNING FOURTH GRADERS, OF WHOM 190 WERE IDENTIFIED AS UNDERACHIEVERS. CERTAIN PRACTICES AND PROCEDURES AND A PHILOSOPHY FOR DEALING WITH LEARNING PROBLEMS WERE DEVELOPED. THESE PROCEDURES WERE USED OVER A 3-YEAR PERIOD OF EXPERIMENTATION. EXPERIMENTAL AND CONTROL GROUPS WERE ESTABLISHED. THE FOLLOWUP RESULTS INDICATED THAT THE NEED FOR COUNSELING WAS NOT FULLY MET FOR THE SUBJECTS. THE UNDERACHIEVERS, AS A GROUP, DID NOT ATTAIN A STATE OF DEVELOPMENT COMPARABLE TO THE GROUP OF ACHIEVERS. TWO DESIGN PROBLEMS ENCOUNTERED BY THIS RESEARCH WERE POINTED OUT FOR OTHER INVESTIGATORS IN THIS AREA--(1) ADEQUATE CONTROLS, AND (2) THE ROLE OF AN OUTSIDER IN A SCHOOL SETTING. IT WAS CONCLUDED THAT SUCCESS IN ELEMENTARY SCHOOL GUIDANCE PROGRAMS IS RELATED LESS TO KNOWLEDGE OF TECHNIQUES OF CHILD STUDY THAN TO THE COUNSELORS' ABILITY TO RELATE POSITIVELY TO THE PARENTS AND TEACHER OF THE CHILD. (RS)

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# RESULTS OF EARLY IDENTIFICATION AND GUIDANCE OF UNDERACHIEVERS

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# RESULTS OF EARLY IDENTIFICATION AND GUIDANCE OF UNDERACHIEVERS

Cooperative Research Project Number: S - 153

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1966

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# I - PROBLEM

## A Statement of the Problem

Educators and counselors have long felt that early identification of children with developmental problems is essential to the effective guidance of these children. In recent years we have seen an extensive development of programs and procedures designed to extend services to younger children in the hope of preventing more serious problems. Professional organizations like the American Personnel and Guidance Association have been attempting to define the philosophy and procedures of elementary school guidance programs and have shown their concern with an emphasis on this program in professional meetings and writings.

The clinical experience of both the writer and probably the reader would probably be consistent with any statement relative to the need for early identification and prevention. Teachers and counselors find that children with learning and developmental problems which have gone unchecked over many years become increasingly difficult to help. Feelings toward self, subject matter, and the school environment become negative and defeatist in nature; they become so hardened that they become almost impossible to alter. Project Head Start emphasizes this point by developing a program that assumes that the pre-school years are the most crucial to the later educational development of the culturally and economically deprived child.

For a number of years the principal investigator of this study has directed a psycho-educational clinic, a service established to assist local schools and parents in working with children who have learning problems. The reasons for referral have usually symptomatically reflected an inability to progress in the school curriculum. Clinical experience has consistently suggested that early identification and counseling was necessary for successful remediation of learning problems. We also observed that typically the low achievement level of these referrees was inconsistent with a predicted level of performance as indicated by teacher's observations or intelligence [illegible]ng; in other words, these individuals were underachieving. Research was needed to ascertain whether or not the more serious developmental problems could be prevented or allayed by early identification and treatment.

This research project is an attempt to determine the extent to which the guidance philosophy and techniques of the investigators has been successful in altering or improving the development of children identified as underachievers at an early age. Often the effects of procedures used in education are taken as a matter of faith. This is serious enough for practitioners and those they seek to help, but when the counselors are also college professors and these same procedures and techniques are also being taught to students as recommended methods for helping children, the failure to evaluate is highly irresponsible. Teachers and counselors must assume the responsibility of investigating the effectiveness of their own philosophy and techniques.

In the fall of 1961, the researchers initiated the cooperative guidance study by testing 1078 fourth grade children in 10 school systems in the La Crosse area. Of these 1078 children, 190 students were tentatively identified as underachievers. This investigation then took a particular philosophy or approach to elementary school guidance and applied it to an experimental group of subjects selected by random procedures from the youngsters identified as underachievers.

Diagnostic and guidance procedures were used over a three-year period with the experimental group of underachievers. Because current practice emphasizes the self-contained classroom at the elementary level, the guidance practices utilized by the investigators emphasized a teacher-centered approach rather than a pupil-centered relationship. Guidance and other service personnel have worked as a team to facilitate the work of a classroom teacher through child-study, conferences with parents, teachers and subjects, and by enlisting the use and support of community resources.

It was hoped that in this relatively new area of elementary school guidance that the data derived from this study would enable the investigators to evaluate the longitudinal affects of this teacher-pupil center guidance program and thus contribute to the effectiveness not only of the investigators, but those professionals who are currently attempting to formulate appropriate philosophies and practices for this new area, and for those currently practicing in the field of elementary guidance.

During the period which the investigators counseled the experimental group of children and in the later follow-up study of their performance as 7th graders, data was accumulated describing their characteristics and performance and the direction and extent of the development which followed. It was determined at the time of identification that not only were these subjects doing less well academically than predicted, but they were likely to have other types of problems such as unchecked physical defects, lack of social acceptance, negative self concepts and less ability to express themselves creatively. The evaluation of the effectiveness of early identification and guidance can be evaluated in part by the subsequent development of these subjects in these various problem areas.

The null hypothesis of the investigator is that counseling would fail to produce any significant changes in the educational or personal performance of students. This study was designed to test this hypothesis by determining whether or not the supplementing of normal classroom experiences of elementary school children with identification and individual attention to the needs of the underachievers would change their developmental direction.

## II - RELATED RESEARCH

Psychologists and educators have often quarreled over the definition and acceptability of the concept of underachievement. The issue, however, is in the operational rather than the abstract definition of the term. Generally researchers agree that an underachiever performs significantly lower than predicted by some type of aptitude measure, while an overachiever performs significantly higher. It is in the techniques employed for subject selection that major disagreements are found.

Many investigators have used a central tendency or quadrant split in a dichotomized distribution of combined aptitude and achievement measures. Underachievers are those who have earned a grade point average or placement on an achievement test below the median or possibly in the lowest quartile, but whose scores on an intelligence scale are above the median or even in the upper quartile. Overachievers can be selected by using the opposite procedure (Lower quartile IQ to higher quartile achievement). Barret (1), Brookover (4), Dowd (11), Kurtz (20), Shaw and Brown (37), and Shaw and McCuen (38) have all used variations of this classification technique.

Other researchers have used a relative discrepancy method wherein grade point average and aptitutde predictors are ranked independently. Under and overachievement are then determined through an analysis of the discrepancy between the two ranks. Diener (9), for example, converted aptitude and GPA into "T" scores and defined his groups on the basis of plus and minus 15 "T" score units. Test publishers are also publishing tables for use with intelligence tests that interpret scores in terms of grade expectancies. Again, discrepancies between predicted grade placement and placement on a standardized achievement battery are used in identifying under- and overachievers.

A third alternative, one demanding more statistical sophistication, is the regression equation technique. Gerberich (14) described this method as one of "smoothing" a scatter diagram of achievement predicted from aptitude measures. Selection is then based on a discrepancy between predicted and actual achievement of at least one standard deviation. By using the standard error of estimate this approach offers possibilities of accounting for measurement error in the identification process. Jensen (16) and Krug (19) and others have used this technique in their selection of research subjects.

The number of underachievers the educator could expect to find in a population of students would vary, of course, with the technique or criteria used in subject selection. Research evidence varies but most studies indicate that underachievement exists in 10 to 25 percent of a given population. Kowitz and Armstrong (18) state that 15 percent of their sample showed underachievement in reading while approximately 10 percent showed underachievement in arithmetic. Dizney (10) reported a study completed for the Ohio Department of Education showing that 16 percent of a cross section of the state's gifted elementary school children were not doing as well as predicted. The Conference on the Identification of the Academically Talented Students in Secondary Schools, February 1958, (24) reported that "15 to 25 percent of the gifted students in most school systems fall into the category of underachievement".

Extensive research describing the characteristic behavior and development of underachievers, however identified, give evidence that underachievement is clearly related to problems of the child in many areas of growth; academic, health, social acceptance, parent-child relationships, self-concept, etc. For example, Keogh and Benson (17) found that 10-12 year old underachieving boys performed below the norms for their age group on physical fitness tests. (However these findings were not supported by a study of 13 and 14 year old males.) They hypothesize that lack of psychomotor and academic skills is also related to a lower level of acceptance in the child's social group. Passow and Goldberg (26) report a study conducted in a New York City high school where personal-social problems were found to accompany underachievement. Kurtz and Swenson (20) found that underachievers were less highly regarded than other children and also suggest that the peer group itself may also facilitate or negate achievements. They found that underachievers had some friends but that these associates did not have high scholastic standards or a favorable attitude towards school.

The same investigators noted that home conditions seem to influence school achievement. Achieving children came from better home conditions and were more anxious to please their parents. These parents were more likely to read, play, and build with their children and attend school and other functions with them. Underachievers tended to have parents who did not expect much of them and produced little in the way of respect or rapport in their relationship to their children. Morrow and Wilson (22) in a study of bright achieving and underachieving boys also found that achievement seems to be associated with homes where activities, ideas and confidences are shared. They hypothesize that good family morale fosters academic achievement through the development of more positive attitudes towards teachers and intellectual activities. The research of Barwick and Arbuckle (2) also supports the hypothesis that a child's perception of a parent's attitude towards education has an impact on his achievement level.

The studies of Carter (7), Norman, Clark and Bessemer (25), and many others indicate that over-placement may be a crucial factor in the development of underachievement. Underachievers are found consistently to be among the younger children in a given grade and tend to be boys rather than girls. The slower rate of maturation of boys when compared to girls of the same chronological age or grade placement apparently places them at a disadvantage in most classrooms.

The self-concept of underachievers is different from that of achievers or overachievers according to many investigations; it may be the cause or the effect (or both) of underachievement. Shaw and Bell (36) found male underachievers to have more negative feelings than male achievers while female underachievers were characterized primarily by ambivalent feelings. Sears (35) related underachievement to level of aspiration. Children who have often failed set their aspirations with little regard for achievement, ultimately leading to complete withdrawal from activity of an academic nature. Calhoun's (5) study of eighth grade underachievers supports the findings of Sears. He states, "...the investigator was struck by the number of pupils whose concepts of their own potential and the appropriateness of their achievement was quite vague." He goes on to summarize the relationship between underachievement and other types of behavior and development by saying, "by now it is fairly clear that both the cause and alleviation of scholastic underachievement involves complex variables and must be dealt with accordingly..... the search for factors related to scholastic achievement, or lack of it, have revealed that mental ability is by no means the exclusive determinant of academic success."

A review of the literature substantiates the hypothesis that underachievement begins early in a child's scholastic career and not only persists, but becomes a greater problem as the child reaches junior and senior high school or the college level. Shaw and McCuen (38) found that among males, underachievers in grade 11 tended to receive grades lower than achievers in the first grade, that this difference became significant at the .01 level at grade 3, and that this difference increased in significance every year from grade 3 to grade 10. Frankel (12) suggests that underachievement starts with the pre-school age and unless checked keeps developing as the person grows older. He also reports that the difference in mean scholastic average for a group of underachievers was twice as great in high school as it was in junior high school. Barrett (1) states that the pattern of underachievement is apparent by at least grade five and that children who function below their predicted level in grade school do even more poorly in the secondary school. The differential is even greater in grades earned than in scores on standardized achievement tests.

The need for early identification is also thoroughly defined in the literature of other related fields. In Delinquents in the Making, the Gluecks (15) noted that school misconduct of delinquents appeared in many before eight years of age. Penty (27), Schreiber (34), Bledsoe (3), and Livingston (21) have pointed out that high school drop-outs can be predicted from elementary school performances, especially when the child has poor reading habits, fails in academic work, and is characterized as having excessive absenteeism and social isolation. The literature suggests that not only do these behaviors have predictable validity, but so do certain instruments and teacher identification. A study conducted by Powers (28) reports that 77 percent of the boys who become delinquent were correctly predicted by teachers to become delinquent.

Two guiding principles in identification presented in the publication Elementary Education and the Academically Talented Pupil (23) are especially pertinent. They are:

> Identification should begin early, preferably in kindergarten or the first grade. This is important for several reasons. First, if a child has outstanding ability at the age of twelve, such

> ability was most likely apparent at an earlier age. Second, a great deal of pertinent information can be obtained at an early age, especially through observation and biographical data. As some bright children grow older, they acquire behavior that tends to "cover up" their ability, thus making identification more difficult. Third, there is evidence that modifiability of the whole syndrome of habits and attitudes which foster optimal development is greater in earlier than in later years. Finally, the abilities of young children must be known if the instructional program is to be challenging to every child, regardless of his age.
>
> The plan for identification should involve many people -- administrators, teachers, psychologists and guidance personnel, special consultants, parents, and even children themselves. The use of so many persons necessitates a well coordinated effort, facilitated by a well conceived plan. All concerned must be familiar with the plan and with their own unique role in it. Even then, some one person---is needed to give leadership and direction.

The foundations of this research project would seem to rest on solid foundations: developmental problems such as underachievement, delinquency, drop-out and behavior disorders tend to have their roots to some degree in early school experiences and can be identified in the elementary school years through pupil behaviors, standardized tests, and the trained observations of teachers.

The literature further suggests that few experimental studies exist which evaluate procedures and techniques designed to prevent more serious learning and behavior disorders whether the field be social work, guidance, clinical psychology or psychiatry. In fact it is only since 1950 that any longitudinal studies have been made on the effect of guidance procedures. Rothney's (31) book, Guidance of American Youth, published in 1950, was the first report of a follow-up study of counseled and uncounseled youth. A second report by this author (32), Guidance Practices and Results, reported in 1958 a five year follow-up study of high school graduates, and was the second longitudinal study of counseling. Rogers (29) and Campbell (6) have attempted follow-up investigations but they dealt primarily with counseling at the high school and adult level. Rothney and Farwell (33) in their 1960 review of studies in the evaluation of guidance and personnel services suggested that there was more need for evidence of the effectiveness for guidance over long periods of time.

In the last few years, researchers have begun to report their investigations of the effects of various guidance programs on the developmental progress of underachievers. Most of these investigators have concentrated their research efforts with youth of junior high or older age level, and their investigations have not included follow-up study. (Concurrent in time with the guidance activities described in this report, Williams and Schmitt (University of Rochester) and Ohlsen (University of Illinois) have conducted experiments designed to improve the achievement and adjustment of gifted underachievers in the fourth and fifth grades respectively.)

Passow (26) reported in 1958 the results of programming underachievers with single teachers for homeroom activities and subject classes. He had hypothesized that if underachievers could share common problems and identify more closely with teachers that their attitudes and school performance would improve. He concluded, however, that grouping in subject classes may not be wise because these youth tend to give each other negative support. For those improving, identification with a teacher who was supportive and interested seemed to be a key factor. Homogeneous grouping was also attempted by Smith (39) with gifted eighth grade underachievers in mathematics. The study was not experimental but of the 16 students who met one hour a day for a combination of math and group guidance, 7 showed "great improvement" in mathematics when returned to regular classes the following year.

Individual counseling sessions with underachievers were conducted by Dieckmann (8) in a junior high setting. At least three interviews were held with each subject. While students in the counseled group raised their subject grades, differences did not reach the .05 level of confidence. The researcher hypothesizes that a longer period of effort and follow-up study for these students might result in significant gains in achievement. Calhoun (5) also counseled underachievers, again interviewing subjects at least three times plus additional conferences with parents. Experimental subjects showed greater gain on achievement tests and in class grades, but differences were significant only on three of the marking comparisons. The researcher concludes: "Here as in many guidance activities more definite conclusions can be reached only through follow-up in later years. Such study should reveal the degree to which a rather marked improvement in some individual cases persists through higher grades."

In summary it should be noted that research investigators have comprehensively studied and analyzed the nature and causes of underachievement. They offer strong evidence that this problem is related to developmental problems of many types and that these begin early in life and persist with even greater intensity if unchecked. A very limited number of investigations have attempted to experimentally evaluate methods and techniques of guiding underachievers. Not only would elementary school programs that could identify and treat these problems seem imperative, but such counseling procedures could not be accepted on faith alone. They must be carefully evaluated through longitudinal follow-up study to determine whether or not they prevented the more serious educational, social, and mental health problems of older youth and adults.

## III - PROCEDURES

Beginning in the spring of 1959, the principal investigators of this study saw a number of children who were referred to the Psychology Department of the University for the diagnosis of learning problems. Schools and parents from the La Crosse schools and the surrounding West Central Wisconsin area sought out the professional advice and diagnostic skills of these men to help find an answer for children for whom there were no consultation services available. A Child Study Center was formally established by these professors to assist local schools and parents in diagnosing learning and developmental problems of children. The cases referred to the Child Study Center ranged in age from five to sixteen years, and symptomatically reflected an inability to progress in the school curriculum. However, the low achievement level of these referrees was typically inconsistent with a predicted level of performance as indicated by a general mental ability test; in other words, these individuals were underachievers.

Through the case work described above, the investigators developed certain practices and procedures, and a philosophy for dealing with learning problems. Clinical evaluations suggested that they were effectively helping children through their diagnostic study and counseling; in their judgement, these results seem to stem from the knowledge and understanding they could give to teachers as to why a child developed as he had and what course of action could be taken to remediate or change the child's direction. Within the age range, however, of the cases referred to the clinic, differential results seem to exist, depending on the grade level and age of the subject. Junior high level or even older students when referred seemed to have attitudes towards school and feelings toward themselves that made effective counseling improbable, or impossible.

A series of discussions was held with superintendents of schools and other educational leaders in West Central Wisconsin. After discussing and thoroughly assessing the problems cited above, a research design as described in this chapter was worked out based upon the clinical experiences of the Child Study Center. It would be a joint effort of the local schools and the University investigators to identify underachievers and more potentially serious learning problems in the elementary school, and to improve the developmental patterns of these youth through a longitudinal counseling program.

A. The Communities and Participation

There has been no attempt to select schools or communities in terms of representation of Wisconsin schools, or a sampling that might resemble the characteristic of a national sampling. To the West of La Crosse is the Mississippi River and this creates a physical and psychological block to the extention of University services in this direction and to the general matriculation of students from the State of Minnesota to this Wisconsin State University. To the East lies a number of towns and small cities, all of which depend a great deal on La Crosse for economic, cultural, and educational stimulation. The investigators contacted all the school systems within 35 miles of La Crosse within the three county area east of La Crosse. These school systems included: Holmen, Onalaska, La Crosse, West Salem, Bangor, Sparta, Cashton, Westby, Viroqua and the State Road School. The letter which follows was sent to each superintendent of schools asking that their school systems approve this research venture.

Dear ___________:

I'd like to formalize the request that you meet with me and the area school administrators relative to our Cooperative Guidance

> Study this Friday, May 12, at 1:30 in the Faculty Lounge. I feel apologetic about asking you to give of your time and especially to have to ask you to come to us, but there does seem to be so many advantages to having all of you administrators together for just this one time. The meeting shouldn't run beyond one hour if we stick to business.
>
> We hope your decision will be to join us in this research study. I will have everything down on paper Friday and copies for all so the exact nature of the study and its demands on teacher time, energies and school finances will be known. I do feel that we can offer a great deal to the teachers and students involved and that this is not a one-way street. The only financial obligation to you will involve giving the Iowa and a group of intelligence tests early next fall. As I understand the situation, you have the supplies on hand. We also plan on developing a pool of materials so that all may use them.
>
> Sincerely,
> Robert M. Jackson

At a meeting held in the spring of 1961, all of the administrators indicated their willingness to cooperate in the project and promised that they would provide any materials and facilities within their power to facilitate this research. These ten school systems representad all the communities having single and double grade classrooms* within the three county area: La Crosse, Monroe, and Vernon Counties. The larger, urban system of La Crosse had a population of about 600 students per grade (all of whom were in single and double grade classes) while the total per grade of the other nine schools together was approximately 1000 students, only 500 of whom were in single and double grade classrooms. Approximately 1100 children were being taught in each grade in single and double grade classrooms within this tri-county area.

The superintendents understood the need for a longitudinal type study with possibilities of a follow-up extending through high school grades.

---

*This would exclude all multiple grade classrooms usually found in rural areas with 1-6, 1-8, or other such combinations.

All felt it was logical to identify the underachievers in the grade school and an agreement was quickly reached that the third or fourth grade would be the most desirable point to attempt to identify children who were developing learning problems. It was felt that only by the third grade could these problems be clearly and consistently identified and yet to wait beyond this point would be inconsistent with one of the basic assumptions of the research plan, the need for early identification. The group decided to begin with that group of children completing third grade and plans were made to do some initial screening of subjects in the spring of 1961 with the full scale testing and selecting from groups to begin the following fall.

Table 3.1 shows the school systems cooperating, the population of the community, and number of students in the third grade at this time and their division into classrooms. La Crosse is an urban community with two or three

Table 3.1. Community and School Populations For Cooperating Schools

| Community | Population | Number of Students | Number of 4th Grade Classes |
|---|---|---|---|
| Bangor | 928 | 17 | 1 |
| Cashton | 828 | 59 | 2 |
| Holmen | 635 | 39 | 2 |
| La Crosse | 50,000 | 605 | 22 |
| Onalaska | 3,200 | 79 | 4 |
| Sparta | 6,100 | 97 | 3 |
| State Road | * | 26 | 1 |
| Viroqua | 4,000 | 78 | 3 |
| Westby | 1,500 | 35 | 1 |
| West Salem | 1,700 | 43 | 2 |
| Total: | 68,891 | 1,078 | 41 |

* Township school administered by La Crosse County Superintendent.

major industries and almost none of the students are transported by school bus. The other communities are heavily rural with many of their high school students coming from farm homes. However, the elementary schools from which our subjects were drawn are located within the geographical boundaries of these communities and almost exclusively contain children living in town. Farm children usually join these classes in 7th or 8th grade. It can be said, then, that the 1078 youngsters in our sample typically live in a city or small town, and were housed in a classroom containing either a single grade or, in some cases, a double grade combination such as third and fourth, or fourth and fifth.

### B. The Independent Variable

The independent variable for this research project was the counseling of the principal investigators. No agreement yet has been reached as to what elementary school counseling should and could be. For these two men it was defined more in the role of a school psychologist rather than in the traditional role of guidance counselor as found in junior and senior high schools. The youngsters identified were by definition those who had some form of learning problem. The counseling involved the diagnostic study of the child in his home, school, and community setting. Using these findings, the counselors then attempted to guide the development of these subjects through the adults involved in primary relationships with the child: the teacher and the parents. The results of child study were interpreted to teachers with the goal of helping these professional people understand and accept the behavior of the child and work out goals and methods of achieving these goals for each individual child. Through conferences with teachers and parents, the investigators tried to help these parties find a consistency in the interpretation of the child's behavior and learning problems. Consistency was also one of the objectives for the counselors as they helped these adults set goals for the children and determine the experiences and relationships needed to achieve these goals. In the counseling setting, the investigators stimulated the teacher and parents to provide every available resource in the life space of these subjects. This included enrichment experiences such as attendance at summer school, provision of books and stimulating games, remediation, etc.

The counselors did not attempt to reach these youths through supportive counseling of the child himself. It was questionable whether these ten or eleven year old children were mature enough to profit from counseling which would help them to know themselves and their world about them. It also seemed important to narrow the scope of the independent variable and to focus on a specific type of counseling philosophy and procedure rather than a scatter-gun approach.

The dependent variable in the study included a number of aspects of the child's performance and attitudes and those of his parents and teachers. It was hypothesized that if the guidance procedures cited above were successful that these subjects would show growth in the following directions:

1. accelerated academic achievements as measured by standardized tests and classroom grades;
2. greater acceptance of these children by their peers and by their teachers;
3. more positive and realistic feelings toward self and environment by the subjects of the study themselves.

Pre-tests were made wherever possible for these dependent variables to provide the basis for later evaluation.

### C. Subject Selection

It was from the ten school systems described above that the subjects of the study were chosen. All of the 1078 children who were in single and double grade classrooms were included as part of the research program. Follow-up studies of this total group of students were needed to provide the evaluation data describing the performance of experimental and control subjects and also to maintain a frame of references for the performance of the counseled and uncounseled youth. Through the three years of the counseling phase of the study, each student was likely to encounter three separate teachers. The number of teachers was also signficant in terms of the counselors themselves. The two counselors knew almost none of these teachers and for every single person involved in the study there was the problem of forming a workable and working professional relationship between the teacher and the counselor. In general, this took most of the year to accomplish and as the end of the school year would close, the counselors were just beginning to feel that "now I have the confidence of the teacher and we can really work together." At that time the child would move into a new classroom and the whole process would start over again. Many of these teachers evidenced a feeling towards the counselors that could be described as a combination of suspicion, fear, and uncertainty. This was understandable in terms of many factors. These teachers were not asking us to help them with cases; rather here were two outsiders not even part of the administrative structure of the school system who were saying, "you need help with these cases." Many school administrators have reported to the writer that teachers began to drop their guard only after they worked through a case with the counselors and no longer feared that these specialists would be critical of them or demand excessive amounts of extra work in their relationship to them. In summary, then, it is impossible to separate the performances of the experimental and control groups in this study from the reactions and relationships that these underachievers and the counselors maintained with almost 1000 other children and almost 150 teachers.

1) Teacher nominations

In the spring of 1961 as the subjects of the study were just finishing third grade, their teachers were asked to help identify potential or actual underachievers through their observations. The following letter and questionnaire was given to each third grade teacher in a meeting with the school staff, along with a guide sheet as to the characteristics that could be used when identifying children with intellectual potential.

Dear ____________:

The investigating team in this research study is trying to identify youngsters who are underachieving in their academic work. One of the problems that confronts us is the limitations of a standardized test in measuring intellectual potential. For example, there is very little difference between the items measuring "IQ" and those found in language or arithmetic "achievement" tests. Because of this we feel that your observations as a teacher may be even more important than a test score in this identification process.

Below is a list of characteristics that authorities say can be used in discriminating between youngsters of different intellectual levels. Using these as a guide we'd like you to identify any youngsters in your class who might be underachieving. Forget IQ scores; if a youngster's achievement in school seems noticeably below his expected performance as based on observable classroom behaviors then we want to know about it. We would rather have you err by identifying too many then to take a chance on missing an "underachiever."

Sincerely,
Robert M. Jackson

## Characteristics

- Quick understanding
- curiosity
- takes initiative
- retentive memory
- early development of self-criticism
- independent thinking
- extensive information
- sees relationships

- large vocabulary
- bored by drill
- early reader
- learns by more complex methods (abstracts and generalizes)
- superior desire to know and excel
- originality
- perceives and solves problems more easily
- unusual interest in number relationships, atlases, encyclopedias, etc.

## IDENTIFICATION OF UNDERACHIEVERS

Name of Pupil____________________ School____________________

Age________ Grade________ Date________ Teacher____________________

I. Describe exactly why you feel this child might be under-achieving:

II. Indicate the characteristics of the above-named pupil by placing a check after the descriptions that best appear under each category:

READING

__1. Seems unable to grasp meanings of reading material.
__2. Reads orally without expression.
__3. Shows little interest in reading.
__4. Reads extensively by himself.
__5. Is unable to relate what he has read.

SPEAKING

__1. Usually speaks fluently in relating experiences.
__2. Usually speaks hesitatively.
__3. Usually uses language comparable to age group.
__4. Usually uses simple language for his age group.
__5. Enjoys speaking before the group.

LISTENING

__1. Is able to relate well what he has heard.
__2. Is unable to relate what he has heard.
__3. Usually demonstrates good listening habits.
__4. Usually demonstrates poor listening habits
__5. Has difficulty giving attention to the speaker.

WRITING

__1. Has difficulty in writing.
__2. Writes well compared to age group.
__3. Is left handed.
__4. In writing, holds head extremely close to paper.
__5. Shows evidence of disliking to write.

NUMBER

__1. Does poorly in all number work.
__2. Usually needs much drill on facts.
__3. Is unable to compute answers to story problems.
__4. Shows evidence of a dislike for number work.
__5. Does poorly on number facts.

GENERAL BEHAVIOR

__1. Usually is quiet and retiring.
__2. Usually is loud and aggressive.
__3. Would usually be noticed in a group.
__4. Is well liked by classmates.
__5. Seems happy

These were discussed carefully with the teachers and the assumption would be that a trained teacher with careful guidance, could through the observation of student performance make some estimate of whether the child was achieving or underachieving.

Teachers nominated 102 students on the questionnaire. Table 3.2 indicates the relationship between their selection and those subjects identified by group tests of intelligence as described later. It should be noted that teachers are not very consistent with the identification of standardized tests. Of the 107 students nominated 35 (34 percent) were underachievers, and 45 (44 percent) were achievers. Twenty-two (22 percent) were achievers who had repeated one or more grades in their previous school work, but whose low level of school achievement was apparently likely to suggest underachievement.

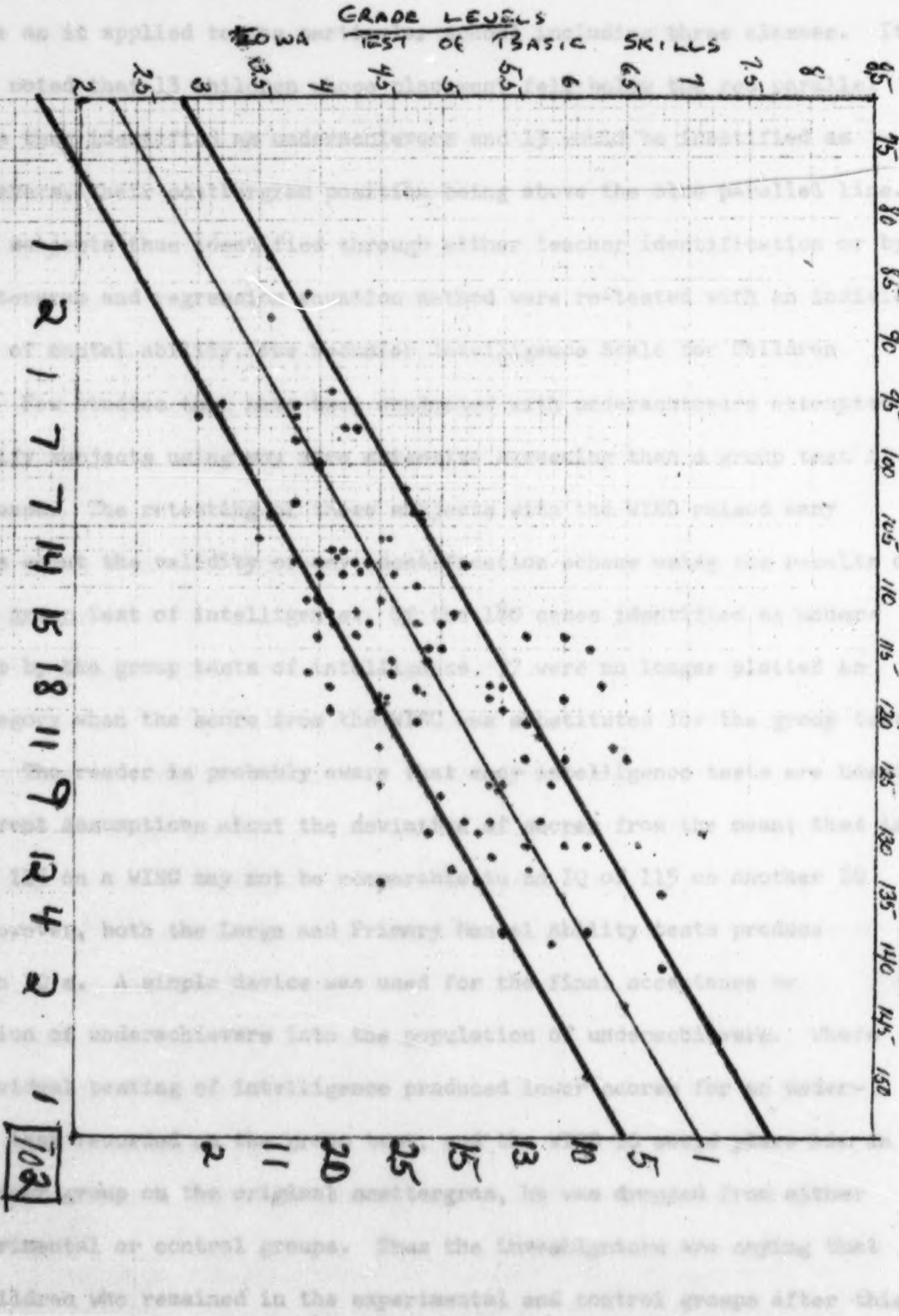
Table 3.2. Results of Teacher Identification of Underachievers as Based on Classification Through Testing Procedures

| Total Teacher Nominations | Underachievers | Achievers | Repeaters |
|---|---|---|---|
| 102 | 35 (34%) | 45 (44%) | 22 (22%) |

After carefully analyzing these questionnaire reports, all the teacher identified underachievers were tested with an individual test of intelligence (WISC). Seven additional students were thus identified as underachievers, using the final criteria of the Wechsler Intelligence Scale for Children and Iowa Composite scores described later. The reader should carefully note that these subjects were not identified by the group tests, but were identified through teacher nomination and the further screening by the Wechsler Intelligence Scale for Children.

2) Identification through testing

In the fall of 1961 the major task of identifying underachievers through standardized tests was begun. Cooperating school systems agreed to standardize their school testing programs on certain pre-selected tests. All schools would cooperate in administering the Iowa Test of Basic Skills to their fourth grade classes sometime between September 1 and October 31. The school systems agreed to provide their own answer sheets because no research funds were available. A pool of test booklets was also established and orientation of all fourth grade teachers was held before this testing began, to insure as much uniformity of the testing environment and procedures as possible. It was also agreed that each school system would administer a group intelligence test again sometime between September 1 and October 31. The choice of the test was left to the discretion of the school system but would be limited to one of three widely used group tests of general mental ability: The Lorge-Thorndike, the SRA Primary Mental Abilities Test, and the California Mental Maturity Test. Again the schools were willing to provide booklets and answer sheets and the scoring of these tests. Results from this testing program were in the hands of the investigators by January 1, 1962. Scattergrams and regression equations were established for each of three group intelligence tests used. A sample of a scattergram for one of the elementary schools follows which shows the scatter of scores for 102 students taking the Iowa Test of Basic Skills and the SRA Primary Mental Abilities Test. Statistical analysis determined that the standard error of measurement for the Iowa Test of Basic Skills was .6 of a grade level. The investigators plotted parallel lines .6 of a grade above and .6 of a grade below the regression line for each group test and labeled as underachievers and overachievers those children whose achievement placement on the scattergram fell



A Regression Equation Describing the Relationship of Achievement and Intelligence Test Scores in Three Fourth Grade Classrooms.

below or above these lines drawn parallel to the statistically calculated regression line. The illustration cited above shows the results of this procedure as it applied to one particular school including three classes. It would be noted that 13 children whose placement fell below the red parallel line were thus identified as underachievers and 13 would be identified as overachievers, their scattergram position being above the blue parallel line.

All subjects thus identified through either teacher identification or by the scattergram and regression equation method were re-tested with an individual test of mental ability, the Wechsler Intelligence Scale for Children (WISC). Few studies that have been conducted with underachievers attempted to identify subjects using any more extensive screening than a group test of intelligence. The retesting of these subjects with the WISC raised many questions about the validity of any identification scheme using the results of a single group test of intelligence. Of the 180 cases identified as underachievers by the group tests of intelligence, 77 were no longer plotted in this category when the score from the WISC was substituted for the group test results. The reader is probably aware that many intelligence tests are based on different assumptions about the deviation of scores from the mean; that is an IQ of 115 on a WISC may not be comparable to an IQ of 115 on another IQ test. However, both the Lorge and Primary Mental Ability tests produce deviation IQ's. A simple device was used for the final acceptance or elimination of underachievers into the population of underachievers. Where the individual testing of intelligence produced lower scores for an underachiever than recorded on the group test, and the WISC IQ would place him in the achiever group on the original scattergram, he was dropped from either the experimental or control groups. Thus the investigators are saying that those children who remained in the experimental and control groups after this retesting were very likely to be underachievers. They had been identified by either teacher observation or the screening of a group test of intelligence; a further check of their estimated general mental ability by an individual test of intelligence had confirmed the original identification. Certainly, a few other youngsters in these classrooms were underachieving; the limitations of standardized tests and the errors inherent in any measurement device necessarily limit the validity of any selection device.

The investigators felt that an identification procedure should be developed which could be reproduced by school systems and school personnel. Measurement experts would probably question the use of group intelligence tests in identifying underachievers. They are heavily flavored with vocabulary and verbal skills and studies of their validity and reliability do not lead to a great deal of confidence in their use. Based on our data we can suggest to them that approximately 60 percent of the cases thus identified would still be regarded as underachievers after a further screening by individual testing of intelligence. Our study also suggests that standardized tests are a better predictor than teacher-observation when individual tests of intelligence are used as a final criteria of underachievement. Schools could adopt this method of identification by simply developing scattergrams of comparable data and without computing regression equations pick out through observation those cases where the scatter would suggest that underachievement is likely. By checking this with the observations of teachers, a school system could develop a fairly valid tool for tentatively identifying underachievers.

3) Selection of experimental and control subjects and other special groups

A number of alternatives offer themselves to investigators as methods for selecting experimental and control groups. Some investigators have used matched pairs, but because of the many factors involved in school performances it is thought that it would be almost impossible to establish comparable pairs by this method. The limitations of the matched pair method for longitudinal studies of this nature are also obvious where attrition could be very high over the period from third grade through high school graduation. For these reasons, the matched pair method was rejected for this study. A table of random numbers is often used for this purpose. All subjects would be numbered and assigned to the two groups based upon the randomization provided by the table. Its most significant limitation was thought to be in its failure to control for teacher personality and skill, and their effects on the development of children. Because the major focus of the counselors in this study was to attempt to help underachievers through parents and teachers, the investigators felt that one of the most important controls was to distribute experimental and control subjects evenly throughout all the classrooms involved in the study.

The investigators then finally used a technique that promised both chance distribution of subjects and control of the teacher factor cited above. The underachievers (now finally selected on the basis of individual intelligence testing) were listed alphabetically by classes. A separate coin toss was made for each class. On the basis of the coin toss the first underachiever was assigned to either an experimental or control group (heads becoming experimentals and tails joining the control group). The other underachievers in that particular classroom were then alternately placed in one group or the other. The results of this process of distribution of subjects were tested through the use of the t-test technique. It was determined that for the variables of sex, IQ, achievement test scores, age, and sociometric scores, that these two groups were not significantly different from each other.

The regression equation technique used in identifying underachievers also provided the identification of groups that could be termed achievers and overachievers. One hundred and five boys and girls were identified as overachievers (that is, falling beyond the standard error of measurement above the regression line) while the rest of the 1078 fourth graders were thus left in the category termed achievers, meaning that their scores fell between the deviation of one standard error of measurement above and below the regression line. Because the size of this group (over 700 children) would make statistical analysis difficult in some cases, a representative sample was drawn using a table of random numbers. In each of the 41 classrooms, two children were thus selected.

The researchers also determined that 102 children had repeated the first, second, or third grades, or were currently repeating fourth grade when this study began. Because the investigators were concerned with many phases of the development of elementary school children, it was thought that comparisons between the performances of repeating subjects and other children would be meaningful. This group of repeaters has also been identified and studied separately. Results of these investigations will be reported later.

## D. Pre-testing of Subjects

Because of the longitudinal nature of the investigation it was felt by the researchers that pre-tests in many areas of development would be necessary to evaluation of the later development of the underachievers to be studied. These pre-tests were conducted in a number of areas including achievement, sociogramming, personality tests, teacher questionnaires, and the judging of art and creative products. The pre-test of achievement was automatically accomplished through the identification process. (Iowa Test of Basic Skills)

For the pre-tests of the social standing of the children a sociogram was administered to all one thousand seventy-eight subjects in all classrooms. The children were asked to list their three best friends and the results of this were scored by giving differential weights to the selection of a child as a first, second, or third choice best friend. Because every child made three choices (rated as three, two, or one point) the average score for any child in every classroom would have to be six points. Scores are then comparable from class to class and from year to year.

The pre-tests in the personality dimension was accomplished through the use of the Science Research Associates Junior Inventory. This is a check list type of personality instrument. It permits a youngster to indicate whether a particular statement is a large, middle-sized, or small problem, or no problem at all. It is again scored on the three, two and one point scale, varying with the intensity of the problem. Comparisons were made between the achievers, underachievers, and overachievers as well as between experimental and control groups.

The pre-test in art was established in consultation with a professional art educator on the University campus. This professor created three written stimuli and these were used to elicit three drawings from each of the 1078 subjects in this study. A sample of the directions given to the classroom teachers and a copy of one of the motivations used to stimulate student art work follows.

Dear __________

A descriptive picture of a fourth grade child would most certainly include some insights into his creative ability. Perhaps one of the very best ways which this understanding can be measured is through his creative art products.

You are being asked to collect three examples of crayon drawings from each one of your students. The art materials which will be needed will be three sheets of manila paper, 12 x 18, and a box of crayolas.

In order that there will be some consistency in the crayon drawings, three separate motivations, one for each drawing, have been developed and printed for you to read. It is important that you as the "art teacher" establish a classroom atmosphere, one in which the entire class will respond with their best creative efforts. It is suggested that you familiarize yourself with these motivations before you present them to the class so you can dramatize and emphasize the motivations, thus helping each student develop a more intensified identification to the particular situation presented. In other words, try to help your students become involved with the motivation as it is read to them.

It is important that you follow carefully the steps listed below:

(Check to be sure that it has been at least 2 days between drawings)

1. Before you begin:
   - a. Be sure that each student has crayons and a 12 x 18 piece of manila paper.
   - b. Have each student fill out the Identification Sheet, listing the name of the school, teacher, their name, etc.
   - c. Since all drawings will be horizontal, have each student paste the Identification Sheet in the bottom right hand corner. Turn the sheet over so the Ident. Sheet is on the back.
2. Read the Motivation
   - a. After the students have begun it is important that they work independently of each other. The teacher is not to help or criticize.
   - b. It is important to allow at least 30 minutes for each drawing experience. Be sure to give each student enough time to complete a thorough creative experience.
   - c. When the student considers that he is finished he is to hand his drawing to the teacher.
   - d. Check to be sure the Identification Sheet is pasted securely on the back. Please, no names should be written on the front.

Since some 1000 fourth grade children will receive the same motivations and the same drawing experiences, your cooperation is most sincerely appreciated. Please try to complete this program during the month of March.

Sincerely yours, Dr. Dale Kendrick - Dr. Robert Jackson

## MOTIVATION # 1

Jim and his sister Judy always met after school by the flag pole. It was Jim's important duty to meet his sister and walk her home. Jim was 9 years old and in the 4th grade and his sister Judy was only 7 years old and in the 2nd grade. Without a doubt Jim would have rather played games with his school chums after school than to walk his sister home, but he had promised his mother and father that he would bring Judy home first and then he would run off to play with the gang.

It was on a Friday afternoon, in early spring, that Jim and Judy met as always by the flag pole. The sky was very dark with low hanging clouds - they looked like huge hands with long fingers that were trying to touch the ground.

Jim and Judy walked down the street from the school, turned left at the corner and seeing the sign, "Main Street", knew that they were on their way down town. On Main Street they looked very long at the large tray of candy in the store window; they walked through Mr. Brown's Drug Store to look at some of the spring kites and marbles; turned right at the big stone National Bank and continued on their way home.

Four blocks from Main Street they came to the train depot and stopped at the two tracks which cut across the platform.

"Over there is the short cut", said Jim, pointing to a path which started down a small hill behind the depot. "Hurry up, Judy! I want to get you home so I can go out and play".

"I don't want to take the short cut home", said Judy. "It goes by the old swamp, and I ....." Judy hesitated. "I want to go home by the long way, on the side of the road."

"Oh, girls are all the same. You are all fraidy cats. Nothing is going to hurt you."

Judy's eyes began to show signs of tears. "I'm not a fraidy cat; I just don't want to go by the swamp. I heard that there was....."

"Judy is a fraidy cat! Judy is a fraidy cat! Judy is a fraidy cat", cried Jim, dancing and pointing at Judy as he made fun of her.

"I am not! I am not a fraidy cat," said Judy.

"Yes, you are. I know that all girls are fraidy cat! In fact, I'll show you. I'll bet you some of my bubble gum wrappers that you are afraid to take the short cut home alone!" Jim was almost sure that Judy would never take him up on his bet. He knew that Judy would never take the short cut alone.

"Yes, yeeeessss..., I will take the short cut home alone. Just you wait and see. I'll show you that I'm not afraid." With a look of false bravery, Judy turned and walked towards the path. "You just wait, I'll be home long before you get three." And with that she grabbed her lunch pail and began to run down the path. Very quickly the trees and high weeds helped Judy disappear down the path. Before Jim could stop her, Judy was gone.

A judging team of five professional artists then met and evaluated all of the 3200 plus drawings collected from the 1078 fourth grade children. Each artist judged each picture and a composite score of all the separate evaluations was then computed for each child.

The investigators hypothesized that one of the major factors involving the responses of children in a classroom was the nature of the relationship with the classroom teacher. It was felt that the school performance and behavior of underachievers would elicit unfavorable responses from classroom teachers and that counseling and child-study would help teachers learn to like and accept these children. When these children were in the third grade and before their teachers knew that the investigators were studying underachievement, each classroom teacher was asked to rate every child in his class from the one that he liked most down to the one he liked the least. Responses were collected from all but two teachers. These teachers indicated in writing that they liked all children equally and that they could not differentiate degrees of liking. The researchers grouped each class by quartiles and comparisons were made between the quartile placement of underachievers and achievers and overachievers as well as between experimentals and control subjects.

Many educators have quarreled with the concept of underachievement. One frequent criticism that has been made has suggested a child can't achieve more than he is capable of achieving. In essence, if one has underachievers one must have overachievers and this is an impossibility. The writer would point out that the techniques used to identify underachievers are not based

Table 3.3. Group Means for Underachievers, Achievers, and Overachievers on Nine Variables

| Sample Group | Variables | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 Best Friend | 2 Squad Leadership | 3 Study Ass't | 4 Jr. I. School | 5 Jr. I. Home | 6 Jr. I. Myself | 7 Jr. I. People | 8 Jr. I. General | 9 Art Creativity |
| Underachievers (N = 172) | 4.37 | .74 | 1.78 | 36.23 | 14.44 | 31.72 | 21.84 | 26.21 | 32.14 |
| Achievers (N = 75) | 6.39 | 1.03 | 3.26 | 26.66 | 11.91 | 26.14 | 16.76 | 25.16 | 33.64 |
| Overachievers (N = 108) | 8.97 | 1.75 | 6.63 | 27.97 | 10.37 | 24.48 | 15.17 | 24.33 | 36.37 |

on measures of capacity, but rather by comparing achievement test scores with the results of tests used to predict and estimate academic performance; in other words, we compared performance with predicted performance. It is logically possible to have underachievement and overachievement in terms of predicted performance rather than capacity to achieve. It is felt that the evidence cited by tables 3.3 and 3.4 offers a strong case for the use of the concept of underachievement in identifying children who need counseling and special help. Through the procedures outlined above, the investigators identified not only subjects who were probably achieving less than other children with comparable ability, but they also located youngsters who were more likely to have problems in social relationships, poor relationships with peer group and teachers, in perception of self and environment, and in creative performances in artistic situations. The differences were significant at .01 level for seven of the nine criteria; only in the Junior Inventory-

Table 3.4. Significance Tests for the Nine Variables

| Variable | F-Ratio | Probability Level |
|---|---|---|
| Best Friend | 164.84 | .01 |
| Squad Leader | 97.37 | .01 |
| Study Ass't | 39.82 | .01 |
| Jr. Inventory-School | 13.51 | .01 |
| Jr. Inventory-Home | 5.63 | .01 |
| Jr. Inventory-Self | 4.47 | .05 |
| Jr. Inventory-People | 135.35 | .01 |
| Jr. Inventory-General | .41 | N.S. |
| Art Creativity | 6.811 | .01 |

**Self was the difference not significant, but the differences in means were in the hypothesized direction.**

**It is suggested then, that educators and specialists accept the validity of underachievement in the identification of children who need further study and consultation and help. Those who are sophisticated in the use of measurement tools will know the limitations of accepting any single measure as indicative of the nature of a child's problem, ability or performances. In conjunction with other programs of child study, the concept of underachievement seems to offer considerable promise to the counselor or teacher in attempting to identify children needing special help.**

## **E. Methods and Procedures of Counseling**

**As indicated in the statement of the problem, educators are still searching for a definition of the philosophy, purposes, and content of a guidance program for elementary aged children. It was hypothesized by the investigators that counseling at this level would be distinctly different than that for a junior or senior high school age youngster. Differences in maturation level make it difficult for elementary school children to make decisions about themselves and their environments. This same immaturity also makes it difficult for them to change successfully their homes, teacher-relationships, etc. The investigators thus formulated a definition of elementary school guidance that was more adult-centered (teacher and parent) rather than child-centered.**

### **1) Child Study**

**It was hypothesized that successful counseling would be based upon a diagnostic approach to a child's underachievement; child study techniques would be used to determine the probable cause and effect relationships. It was felt that the counselors could best affect a change in the child's**

developmental direction by working with and through the adults who dominated his life space. The first approach to the child then was to elicit and obtain as much information about the child's performance and background as could be gained by these counselors. They based, in part, their methodology on a criteria described by J. W. Rothney (30) in Counseling the Individual Student. It includes the following statements:

1. Any data about an individual that assists in the understanding of his behavior must be given due consideration.
2. The culture in which the individual is reared must be examined.
3. Longitudinal data must be used in the study of the individual.
4. Conceptual association must be continuous as each separately evaluated datum is added in the study of the individual.
5. Any datum about an individual that is to be used in his counseling must be appraised in terms of its' accuracy and economy.

2) Working conditions

Certain obvious and significant problems are inherent in any kind of research study of this nature. For example, the investigators were University professors and went into these public schools as strangers; as suggested earlier, they were often received with hostility, suspicion, or fear. For a counselor to work through the adults identified with the child's world, it must first be necessary to establish rapport and gain the confidence of these adults. The investigators were aware of this problem but had no idea of the intensity or significance it might have in their efforts. It can probably be reported that success with the children was related first and foremost to the success the counselor had in establishing a working relationship with the teachers and parents. In many cases it took the full academic year to finally establish this confidence and by that time children were moving on to the next teacher. It is possible and probable that if the counselor team were to begin their efforts with another group of children and work through the same years and with the same teachers, that they could be far more successful in helping the children involved. Working professional relationships just cannot be established overnight! Some teachers, too, worked well with one of the counselors while some related better to the other. In some cases, neither counselor could establish a successful professional relationship with a particular teacher. By the third year of the study we no longer attempted to work in those classrooms. Experience seemed to suggest that our time was being wasted.

The relationship established by the counselors to the building principal or elementary supervisor was also crucial. Principals are quite effective in leading their teachers towards or away from acceptance of a project. The counselors met with all teachers at the beginning of each year, and the principals were urged to attend these meetings. However, no special efforts were made to meet alone with and to incorporate the principals into the initial planning of the project. This was a matter that had been discussed with the superintendents of schools and these men had advised the investigators against this. Later experience suggested that all had apparently underestimated the nature and significance of the problem. As the counseling phase of the study began it was evident that these relationships should not have been taken for granted. Some principals were hostile to the counselors as persons; some felt that any outsider was an intruder in their building; and some reportedly influenced their teachers by suggesting that these counseling techniques and methods were a waste of time, or that a child or children did not need help or would not profit from this type of help.

By the second year of the counseling phase of the study, the counselors became very aware of a distinctly different attitude towards their efforts in the large urban system as opposed to the collection of smaller systems in the outlying geographical areas. The acceptance of both the research study and the readiness to accept help for underachievers from these specialists seemed to be significantly greater in the outlying or more rural areas. As will be reported in the next chapter, differential response seems to show itself in both the reported evaluations of the teachers involved and in the growth and behavior of the experimental subjects themselves.

3) Facilities

In all cases, the counseling team used facilities as provided by the school systems. All schools were able to provide at least some sort of work area with a resonable degree of privacy. Testing of children was usually done during the school day; children were withdrawn from the classrooms, arrangements being made a day or so before by mail or phone. Conferences with the teachers and parents were held during lunch hours and after school, or at any other time where necessity indicated a change in procedure.

4) Activities in the first year

An orientation meeting was held before school began with all teachers and those administrators who volunteered their attendance. The investigators discussed the general purpose and structure of the research designed and also oriented the teachers carefully about the standardized testing which was to begin immediately and the counseling procedures which would follow. The child-study program and counseling for the experimental group of underachievers was actually not begun until mid-February of 1962. Approximately two out of every three subjects received case work during the spring of 1962. For the other experimental underachievers the counseling phase did not begin until early in their fifth grade year.

The various pre-tests cited earlier also served as diagnostic tools in the child-study program. This included achievement testing, art work, sociometrics, intelligence testing and the personality test. The Wechsler Intelligence Scale for Children was administered to all underachievers beginning on the first of February, 1962, and was a valuable diagnostic tool. Sentence completion tests, written by the researchers, were completed in all classrooms for 1078 subjects with alternate forms given in each year of the counseling phase. It was hoped that teachers could use these questionnaires to help them teach all youngsters more effectively but the investigators particularly wanted the responses of the subject to be counseled. The form used in the spring of 1962 is as follows:

DIRECTIONS (To be read by the teacher)

> We think you will enjoy making a sentence out of the few words which we have listed as "starters". This is not a test. Rather we would like to know more about you. Put down the first ideas that you have rather than thinking about each one for a long time.

1. At home...
2. I like...
3. School...
4. I secretly...
5. I hate...
6. I am interested in...
7. Games...
8. I'm really happy...
9. My brother...
10. My sister...
11. I wish...
12. The best...
13. I get mad...
14. I can't...
15. Reading...
16. I need...

Data sheets which questioned parents about occupational, educational and general family history were solicited from all 1078 families with children in the fourth grade. To encourage response and answer any questions about the research project, meetings with parents were held in each school building. The research design and objectives was explained and justified. The counselors suggested to parents how the child study procedures would be used and their relationship to the educational program for all children, whether underachievers, achievers, or overachievers. Questionnaires were ultimately collected from 100 per cent of the parents of the fourth grade children; some were ultimately filled in by the school personnel based on other records where parents were hostile or uncooperative. While most parents were cooperative, some were not. This ranged from one parent saying, "I'm sorry but I don't think this has any bearing on my son's fourth grade work. When I take out a loan with the schools I'll tell you all about me.", to a simple statement or response to a request such as, "this is too personal". Some parents communicated their endorsement too; one wrote a note to the investigators saying "...... I just had to drop you a note to tell you and your fellow workers how uplifting it is to me to see such complete interest in your project of testing the fourth graders. We don't think we have any problems with our son, Dave, but it is a wonderful feeling to know we have men and women interested in our young people."

A copy of the questionnaire follows:

Child's Name ____________________ School ____________________
Last First Teacher ______________ Date ________
Check one
____Father ________________________________________
____Foster father Father's last name First Initial (Age) (Birthdate)
____Guardian Address: ________________________________
____Step-father Occupation: ____________ Employer ________ Since ______

What does he do on the job? ________________________________

Circle last completed grade of schooling: 6 7 8 9 10 11 12 Fr S Jr Sr 1 2 3
(Public) (College) (Grad)

High school diploma ____yes List college degrees: ________ Certificate ________
____no (or license)

List any other post high school experience, such as apprenticeships, business school, service schools and also the number of years spent in training for each. ________________________________
Check one
____Mother ________________________ Age: _____ Birthdate ______
____Foster mother Last name First Initial
____Guardian Address: ________________________ Phone: ____________
____Step-mother Street City

Occupation: ____________________ Employer ____________________
(other than housewife)

Address: ____________________ Since ____________

What does she do on the job? ____________________

Employed part time? ________ or full time? ________ List hours worked per wk ___

Circle last completed grade of schooling 6 7 8 9 10 11 12 (Public) Fr S Jr Sr (College) 1 2 3 (Grad)

High school diploma ___yes ___no List college degrees ________ Certificates ________

List any other post high school experiences such as business school, nurses training, beauty operator's course, etc. and also the number of years spent in training. ____________________

Are parents living together ___yes ___no Divorced ____________ Separated ____________

If child is not living with both parents, with whom is he living? ____________

List (beginning with the oldest) all the children in the family including stepchildren

| Name | Sex | Date of birth | Last grade completed | Occupation |
|---|---|---|---|---|

Do you rent ___ own ___ your home? Number of permanent changes of residence during last ten years? ____________

Do you receive a daily newspaper? yes___ no___ Names? ____________

What magazines do you receive at home? ____________

Do you have TV?

____________________
(Signature)

As the counseling phase of the study began, certain suggestions were made to teachers to help them understand and teach underachievers more effectively. These often took the form of a letter sent to classroom teachers such as the following:

COOPERATIVE GUIDANCE STUDY

January 1, 1962

Many of the underachievers are gifted and bright children. They aren't easy to teach, are they? Children like this can learn in one-half or one-fourth of the time it takes a child in the "normal" IQ range. Much of the challenge here is in really stimulating the child, really permitting him to go ahead at his own pace. Don't you feel that the child who is challenged is really the happy one in the classroom? Boredom is not a happy state.

We hope you will accept this one suggestion. For each one of these gifted and bright students (IQ 115 and above) will you help them develop at least one extensive project this year? By this we mean to pick one particular interest and let the child really go into it in depth. Project work is particularly appropriate for gifted children: 1) the study skills it involves are at least as important as the facts learned; 2) it permits the child to work at his own speed and go as far as he desires; and, 3) an interest thus stimulated can be the key to expanding interest in all areas of school work and it can eventually become something as significant as a direction for a life's work.

We'd be glad to help you from our end in any way we can. This list of suggestions in the area of mathematics might offer some new ideas. Perhaps a visit to a community resource person would be stimulating and we can help arrange this. Our library might add to the depth of his study. Working together we could involve parents in the project or certainly inform them as to the child's activities. Finally, if the child reports or presents his findings to the class, we'd love to be invited as a "guest" to hear the results.

Bob Jackson
John Cleveland

---

At the end of each year, teachers were asked to record anecdotal descriptions for experimental and control subjects. The following letter was written to explain the purpose and nature of the anecdotal description:

February 5, 1962

Dear Teacher:

The underachievers have been identified and guidance of one half of these children will begin this month. We are now completing a round of conferences in which we have tried to acquaint each of you with the method used in the identification of the underachiever and also described briefly our findings thus far.

Again this semester college students will be assigned to most schools to observe children, help in testing, aid the teacher in work connected with this project, and possibly, when indicated, to give some special help to these underachievers. This relationship seemed helpful for you and for us the first semester.

Enclosed are anecdotal description blanks. We'd like you to complete them for the children whose names are on each sheet during the month of February. This will give us a way to record improvement in the child and to better understand his behavior. May we make these recommendations dealing with the writing of anecdotal descriptions?

> The anecdotal description is a written account of a student's actual behavior as observed in a specific situation. The anecdotal description facilitates the understanding of the individual by describing patterns of behavior characteristic of the student.
>
> In describing behavior, brief sentences are advisable, sentences which emphasize objectivity. For example, you may wish to describe an incident which took place in a certain setting. You may also wish to write a brief summary of the distinctive characteristics of this child.
>
> In the section dealing with interpretations or comments we would invite your feelings about why the child behaves as he does. Your own reactions to the child might well be included here. In other words the writing under behavior is to be objective....facts. In the second we invite your subjective interpretation of what you have observed.

Enclosed are extra blanks which we hope you will use to record any meaningful behavior you might observe during the second half of the semester. We would like to have at least one more anecdotal description for each child before the end of the semester.

We will be happy to supply you with additional anecdotal description blanks. We feel nothing is as important to a cumulative record as these teacher observations.

Sincerely,

John C. Cleveland
Robert M. Jackson
Kenneth Fish

### 5) Activities in the second year

Counseling procedures began right away in the fall of the second year. The emphasis at first was on those cases where the investigators had not indicated child study the preceding spring. Diagnostic study was continued for all experimental underachievers and continual follow-up study was made to constantly re-evaluate behavior and redirect the efforts of the parents, teachers, and counselors.

A number of child-study procedures were completed involving all fifth grade students. They included:

1. Achievement testing with the Iowa Test of Basic Skills in September and October.
2. Intelligence testing with the Lorge-Thorndike Group Test of Intelligence in March.
3. Sociometric testing with a Social Distance Scale and a Best-Friend Preference as administered in the spring of 1962.
4. The development of Wetzel-Grids using the height and weight measurements as taken by classroom teachers.
5. Physical fitness testing using the American Association of Physical Education, Health, and Recreation Test of Physical Fitness.
6. Sentence completion using a comparable form to one described earlier.
7. Creative writing tests using three selected programs from the Let's Write series taught by Mrs. Mauree Applegate Clack, on the State FM radio network. Most classes tuned in to the program and the children responded directly in writing to a particular stimulation provided by Mrs. Clack. The playing of

a tape recording provided this same control where classes missed or were unable to hear the original stimulus.

Careful notes were kept from all conferences with children, teachers and parents. The counselors relied heavily upon joint parent-teacher-counselor conferences. They often invited the child himself to sit in on part of this conference. Test scores were interpreted to all parties, school performance discussed, and future goals and activities formulated.

6) Activities of the third year

Meetings were again held with all classroom teachers at the beginning of the youngster's sixth grade year. By now, most teachers had learned by the grapevine how the counselors operated in terms of procedures and methods. However, these were carefully discussed and clarified and teachers were given full opportunity to ask questions. Attitudes of these professionals seemed to vary from enthusiasm and impatience to begin work, to a sullen resentment or a question about "what extra work will it demand from me?"

A number of tests were again administered to all sixth grade subjects. Included were:

1. Achievement testing with Iowa Test of Basic Skills.
2. Intelligence testing with California Short Form Test of Mental Maturity.
3. Social Distance and Best-Friend Sociogram testing.
4. Tests of physical fitness.
5. A sentence completion test.

Counseling procedures were maintained with all subjects except where teachers or school systems were felt to be so hostile that efforts were deemed to be a waste of time. Conferences were still frequently held with children, teachers and parents. Teachers were encouraged to provide enrichment or remedial instruction where the case called for it. In one or two of the school systems, and at the University, summer school classes were held for children with remedial reading problems, or just as a general enrichment or stimulatory motivation for school children. Wherever possible, underachievers were encouraged to enter these programs. For example, twenty-five to thirty of them were enrolled each year in this type of program on the University campus. It was consistent with the design of the research to encourage parents and teachers to make available and use every possible resource which might stimulate or aid the development of these children. So the counselors attempted to help children make full use of any summer enrichment or remediation program. One subjective evaluation made by the investigators at the time of the children's enrollment in the special programs seems significant. Many of these children had not been progressing and often were acting out in their classrooms during the school year. Yet, on the very intensive teacher-pupil ratio which was provided in summer school experiences, all youngsters began to thrive and respond. Even the most confirmed rebel, the most persistent failure, began to blossom under the one-to-one relationship provided in the summer months. It seemed in watching that it was the nature of the personal relationship between the teacher and the student that was responsible for this surge in interest and motivation. Yet the observation of the researchers and the report of teachers and parents was that once the child was returned to the large classroom group of the regular school year, he or she immediately regressed back to the old pattern of achievement and behavior. It is felt, however, for at least a few of the cases in the experimental group, that the accomplishments of teachers in the summer school triggered a reversal in developmental direction both in terms of achievement and in other responses and behaviors of the child.

In summary, counseling for these underachievers was adult rather than child-centered. The counselor attempted to aid children by changing the perception of the adults toward the child, his problem, and his behavior. They hoped to encourage achievement through diagnostic study of the learning problem and through recommendations for prescriptive teaching of that child whether it be in terms of remediation or enrichment. They attempted to marshall all resources of the home, school, and community to help these children whether it be through special classes, tutoring, joining of clubs, or the enlistment of any resource person in the area. The independent variable then is not the simple, easily-defined factor that the experimental psychologist would prefer. It has been narrowed by the investigators. Yet, they were testing a philosophical and a broad methodical approach, rather than one of the specific techniques or procedures used by these same counselors. It is their feeling that both types of research are important and must be carried on.

F. Follow-up Procedures

The counseling phase of this research project was completed in June of 1964. The follow-up began immediately with a study of their performance during the seventh grade year for the subjects of this investigation. The cooperating school systems all gave their permission and promised whatever resources were needed to complete the follow-up study. Many procedures were used and they included the following: an evaluation questionnaire to the teachers and parents of underachievers; a vocational aspiration questionnaire given to all the seventh grade children; measurement of school performance and learning through retesting with the Iowa Test of Basic Skills; the analysis of classroom grades earned in all academic subjects; and re-testing with the SRA Junior Inventory.

One hundred per cent response was reached in the questionnaire given to the cooperating teachers. The letter and questionnaire follow.

> Dear Teacher:
>
> During one of the last three years you have been a cooperating teacher on a research project termed the "Cooperative Guidance Study". It is time to evaluate the effectiveness of this program. It has had its good points and bad, and we want your candid and honest evaluations of the personnel and program involved. You needn't pull any punches.
>
> Enclosed is a return addressed envelope. If we don't receive this in two weeks we'll probably call to nag you a bit because it is imperative to have this survey completed by June 1st. Thanks for your help here and all through these three years. Hope you will want to hear about the results of all this later.
>
> Sincerely,
>
> Bob Jackson

The Teacher Evaluation Questionnaire is reproduced on the following two pages.

## TEACHER EVALUATION QUESTIONNAIRE
### Cooperative Guidance Study

Name________________________________ School____________________

Grade taught ____________ Date of Evaluation __________________

I - Attitude towards the children identified as underachievers.

A. What were your attitudes and feelings as you first related to these children? (if different for different children, tell us so and suggest why this was so)

B. If they changed during the year you worked with the child, how did they change and in what direction? Why?

II - Relationships to the Guidance Team

A. What were your feelings towards these counselors as you first met and worked with them? Why did you feel the way you did?

B. If these feelings changed, in what direction did they change? Why?

C. What major criticisms of the philosophy of these counselors would you make and of the ways that they tried to relate to you as a teacher?

D. What positive evaluations could you make of these counselors, their philosophy and the ways that they tried to relate to you as a teacher?

Evaluation of Child Study and Guidance Procedures
(as used in the Cooperative Guidance Study)

| | Helpful | Adequate | Insignificant | Harmful | Comments |
|---|---|---|---|---|---|
| Individual Intelligence Tests | | | | | |
| Achievement Tests (use of profiles, interpretation to parents and children, etc.) | | | | | |
| Sociometric Tests | | | | | |
| Sentence Completions | | | | | |
| Personality Inventories | | | | | |
| Tutoring of Individual Children | | | | | |
| Staffings among professionals (Teacher, counselor, principal) | | | | | |
| Conferences with parents (Teacher and counselor attending) | | | | | |
| Summer School Attendance by child for enrichment or remediation | | | | | |
| Gifts of books, hobby materials, etc, | | | | | |
| Interviews with children by the counselors or teacher | | | | | |
| Child's attendance at parent-teacher conference | | | | | |

The questionnaire submitted to parents did not elicit a 100 per cent response. Some families had moved away and could not be contacted. Others were reminded repeatedly by mail and phone to return the questionnaire, and efforts terminated only when, in the judgement of the investigators, further nagging would have produced hostility which would have carried over into the responses made to the questions. The letter to parents and the questionnaire used follow:

Dear Parent:

For the last three years we have been working with you and your schools to help your child develop to his or her fullest potential. The success, happiness, and well being of this boy or girl has been, and is, our first concern. This was also, as you know, a research study designed to help us evaluate our own philosophy, skills, and methods. While we expect to continue our study of the progress of all 1000 sixth graders until they graduate from high school, the guidance activities that we have centered around your child for the last three years will no longer be carried on.

We need your help now in studying where and why we have succeeded and failed. By carefully and honestly answering the following questions you can be a tremendous help in this task of evaluation. It is our responsibility to pass on to other schools and counselors complete and honest results of this research. Your ideas and feelings are an important part of this record, and like all other information will be held in complete confidence. Perhaps, too, you'd like to talk this over with us in person; if so, return the enclosed card and we'll make an appointment at your convenience. But in any case, please complete this questionnaire.

Won't you sit down today and answer these questions. Let's not put it off because frequently things put off are things forgotten. It is very important that we have 100% response.

Sincerely,

Bob Jackson

## COOPERATIVE GUIDANCE STUDY
## Parent Evaluation Questionnaire

Child's Full Name______________________________ School________________

Parent's Name__________________________________ Date ________________

Check which ever of the following best describes your feelings towards our program during the last three years:

_____ It has been an important help to us
_____ It has helped somewhat
_____ It has had both good and bad points
_____ I would rather that my child had not been in this program

Tell us why you feel the way you do.

What important growth and improvement (or lack of it) have you seen in your child in the last three years? Can you suggest why?

a) School achievement and classroom work:

b) Relationships with friends:

c) At home and in the family:

d) Others:

If our program has in any way helped or hindered your child's growth, can you tell us how?

Individualized attention of teacher_______Yes (it helped) _____No(it did no

______? (Uncertain)

Explain how:_____________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

Parent - Teacher - Counselor conferences _____Yes _____No _____?Uncertain

Explain___________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

Summer School Program ________Yes _____No ______? Uncertain

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

Tutoring _____ Yes _______ No _____ ? Uncertain

Gifts of books, hobby materials, etc. _____ Yes _____ No _____ ?

Testing and Interpretation _____ Yes _____ No _____ ?

Others: ____________________

If we turned the clock back three years, knowing what you know now, would you want your child to be in such a guidance program now? _____ Yes _____ Uncertain
_____ No

Why? ____________________

____________________
Signed

All seventh grade subjects responded to the student questionnaire. This was filled out in classrooms under the supervision of teachers and junior high guidance counselors. A sample follows:

NAME____________________SCHOOL__________________DATE____________

1. Check the one statement below that tells best how you feel about going to school.
   ________I really like it.
   ________My likes balance my dislikes.
   ________I don't like it but I'll put up with it.
   ________I hate it.
   Why?____________________________________________

2. If you could be doing whatever you wanted to ten years from now, what would you be doing?______________________________

3. If one of your friends was asked to describe you, what would he or she say?____________________________________

4. If you could spend all of your time on one course, which one would it be?________________Why?__________________________

5. If you could drop one course, which one would it be?____________
   Why?____________________________________________

6. Do you expect to graduate from high school?
   ________Yes Why?______________________________
   ________No
   ________Uncertain ______________________________

7. List your first three choices if you were selecting your occupation right now.
   1. ________________________
   2. ________________________
   3. ________________________

   Tell us why you made your first choice? (Likelihood of succeeding, financial reward, interest, etc.)__________________________

8. Who of all the people you know, or heard of, or read about, would you most care to be like?________________________

Why?__________________________________________

9. Do you feel you are achieving as well as you might in school? ___Yes
Why or why not?_________________________________ ___No

____________________________________________

____________________________________________

The results which follow in the next section are a report of findings of the investigators as elicited through the data collected in the counseling phase of the study and through the follow-up procedures administered in the schools and in the homes while these subjects were in seventh grade. Further study will be made of later school performance if funds are available. This will probably be attempted during the ninth and twelfth grade years of this, the graduating class of 1970.

## IV - ANALYSES OF THE DATA AND FINDINGS

The design of this research project included a follow-up study of the educational and personal development of these subjects beyond the counseling phase of the study. The data which appears in this chapter includes both an evaluation from material collected during the years of counseling the underachievers, and also an analysis of their performance during the first year of junior high school. The intent of the researcher is to later extend the follow-up investigation of these subjects through high school graduation. In this chapter the writer will describe not only the evidence from the experimental phase of this project, but also some descriptive studies which seem closely related to the nature of the problem. It is hoped that these studies may stimulate school systems to develop and test new programs; the data suggests many questions about school policies and the educational and personal development of children in a school setting.

### A. The Evaluation of Counseling

Tweleve criteria were established for statistical evaluation of the effect of counseling on the experimental group of underachievers. They included:

Best friend preference
Social distance scale
Teachers liking scale
Jr. Inventory-School
Jr. Inventory-Home
Jr. Inventory-Self
Jr. Inventory-Friend
Iowa composite
English marks - seventh grade
Math marks - seventh grade
Social Studies marks - seventh grade
Science marks - seventh grade

For some of these criteria (achievement tests, sociometric ratings, personality inventory sub-tests), pre-tests were conducted during the first year of the study. None of the mean differences in these data between experimental and control groups were significant as judged by tests of statistical significance. For the other criteria used (teacher-liking, social distance scale, and classroom grades) it was not possible or feasible to administer pre-tests; the distance and liking scales were too sophisticated for the third and fourth grade levels and grading procedures were so different from school system to school system that in the judgement of the investigator valid comparisons could not be made.

As was reported in Chapter III, analysis of variance indicated that the performance of underachieving, overachieving, and achieving subjects was significantly different as evaluated at the time of identification (fourth grade). In all cases, the results favored the overachieving and achieving students as having fewer problems, more friends, being more creative, etc. After a period of three to four years has elapsed, an important question arises: are the groups still different? Were the enrichment experiences provided the students effective? Was the adults centered counseling effective in stimulating growth and development? Multiple discriminant analysis (Govedon, 1952; Rao, 1952) was applied to the data in the evaluation of the seventh grade performance of experimental, control, and achieving subjects to determine if significant differences still existed in the behavior and performances of these basic groups. Table 4.1 reports the means for the three groups on the 12 variables. It can be seen that for every variable except the Junior Inventory-Home, the achieving group has higher scores, better grades, or fewer problems. The means of the table reveal that whatever differences exist in the academic and social performances among the groups, the greatest difference is between the experimental subject and the achievers, and the control subjects and the achievers. The relative performances of the

Table 4.1 Three Group Means on 12 Variables

| Sample | 1 Best Friend | 2 Social Distance | 3 Teacher's Liking | 4 Junior Inventory School | 5 Junior Inventory Home | 6 Junior Inventory Self | 7 Junior Inventory Friend | 8 ITBS Composite | 9 Eng. | 10 Math. | 11 Soc. Stud. | 12 Science |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Experimental (N=50) | 5.92 | 2.66 | 3.35 | 34.44 | 11.60 | 22.84 | 15.26 | 7.30 | 2.94 | 2.92 | 2.96 | 2.88 |
| Control (N=39) | 5.67 | 2.73 | 3.26 | 33.02 | 9.93 | 23.98 | 15.74 | 7.07 | 3.00 | 2.72 | 2.74 | 2.91 |
| Achievers (N=59) | 7.36 | 2.33 | 3.63 | 25.95 | 10.40 | 21.40 | 14.25 | 8.09 | 3.49 | 3.55 | 3.38 | 3.38 |

experimental and control students on the evaluative criteria appear to be substantially equal. This finding is borne out by the data of Table 4.2 which presents the results of the tests of significance of the discriminant functions among groups, by pairs. The F values for experimentals vs. achievers (F=2.16) and for control vs. achievers (F=2.84) both indicate statistical significance for 12 and 134 degrees of freedom, while that for experimental vs. control (F=1.09) does not offer sufficient evidence to reject the null hypothesis.

Table 4.2. Significance of Differences Between Groups

| | | F-Values | |
|---|---|---|---|
| | Experimental | Control | Achievers |
| Experimental | ------------ | | |
| Control | 1.09* | ---------- | |
| Achievers | 2.16** | 2.84*** | --------- |

Notes: $df_s$ 12, 134

* $P > .05$; N.S.
** $P < .05$
*** $P < .01$

Significance tests for each of the variables were conducted to determine whether or not the 12 evaluative criteria can be used alone to discriminate among the three groups. As is shown in Table 4.3, none could significantly make this discrimination. It is apparent from this analysis, that at least on these variables the underachievers had not attained a

Table 4.3. Significance Tests for Each Variable

| Variable | F-ratio | Probability Level |
|---|---|---|
| Best Friend | 0.54 | N.S. |
| Social Distance | 2.13 | N.S. |
| Teachers Liking | 0.00 | N.S. |
| Jr. Inventory-School | 1.48 | N.S. |
| Jr. Inventory-Home | 1.37 | N.S. |
| Jr. Inventory-Self | 0.43 | N.S. |
| Jr. Inventory-Friend | 0.42 | N.S. |
| Iowa Composite | 1.34 | N.S. |
| English grade | 2.26 | N.S. |
| Math grade | 1.59 | N.S. |
| Soc. Studies grade | 1.78 | N.S. |
| Science grade | 0.59 | N.S. |

Note: $df_s = 2, 134$; F=3.00; P=.05

comparable state of development to a sample group of achievers. It would seem that after the lapse of four years these children might still be classified as children having developmental problems.

Further analysis of the differences between experimental and control groups of underachievers suggests that the need for counseling has not been fully met for these subjects. "T" tests were conducted between the mean performances of experimental and control subjects. For none of the 12 variables did the differences reach the 5 percent level of confidence. As can be seen in Table 4.4, in 10 of the 12 variables analyzed the experimentals out-performed or had less problems than did the control subjects. Only in

Table 4.4. Critical Ratios of the Means for Experimental and Control Subjects on 12 Variables

| | $\bar{X}$ | C.R. | Probability Level |
|---|---|---|---|
| 1. Best friend | E. 6.62<br>C. 5.92 | .655 | N.S. |
| 2. Social distance | E. 2.57<br>C. 2.68 | 1.19 | .20 |
| 3. Teacher liking | E. 3.39<br>C. 3.26 | 1.34 | .10 |
| 4. Jr. Inventory-School | E. 35.0<br>C. 35.2 | .05 | N.S. |
| 5. Jr. Inventory-Home | E. 12.5<br>C. 10.8 | .88 | N.S. |
| 6. Jr. Inventory-Self | E. 24.5<br>C. 25.7 | .33 | N.S. |
| 7. Jr. Inventory-Friends | E. 16.8<br>C. 17.4 | .23 | N.S. |
| 8. Iowa Composite | E. 7.37<br>C. 7.08 | 1.41 | .10 |
| 9. English grades | E. 3.04<br>C. 3.07 | .17 | N.S. |
| 10. Math grades | E. 3.01<br>C. 2.70 | 1.94 | .10 |
| 11. Social Studies grades | E. 3.07<br>C. 2.82 | 1.72 | .10 |
| 12. Science grades | E. 3.00<br>C. 2.84 | 1.49 | .10 |

the Junior Inventory-Home scores and in the seventh grade marks from English classes did the control group show more positive development. The 10 percent level of confidence was reached for five of the categories where counseled students exceeded uncounseled subjects (the teacher liking scale, Iowa Tests of Basic Skills composite score, and marks in science, social studies, and mathematics). The reader is faced with the dilemma not uncommon to counseling research or any similar investigation in the behavioral sciences. At what level of confidence can one begin to accept the validity of counseling as evaluated by investigations such as this? Clinical experience would suggest that no counselor could expect to be successful with all cases. Just what type of success ratio a counselor might realize would at least depend on the age of the subject, the nature of the problem, the setting in which counseling is being conducted, and the skills of the counselor. The reader, of course, will judge for himself whether or not he could justify any amount of faith in an elementary school counseling program based on the design and results of this study. This writer suggests that the relative consistency of the differences in favor of the counseled subjects and the relatively high level of confidence attained in comparison to expectations for studies in the behavioral domain, would tend to support the validity of a counseling program at the elementary school level.

Evaluation questionnaires were submitted to all the teachers who worked with the counselors through the fourth, fifth, and sixth grade levels. While self-report evaluations are acknowledged by the researcher to have limited validity, this counseling was by definition of an adult-centered nature, and a report of the attitudes and evaluations of teachers and parents with whom the counselors worked is an important part of the data. The teachers who worked with the underachievers were asked to describe their attitudes towards these children and how their feelings changed throughout the duration of the study. As can be noted in Table 4.5, 47 percent of the teachers

Table 4.5. Teacher Evaluation of Initial Response to Underachievers and Direction of Change Through the Counseling Phase of the Study

| | Percent Positive | Percent Neutral or No Change | Percent Negative |
|---|---|---|---|
| Attitudes before counseling | 47 | 42 | 11 |
| Direction of attitude change after counseling phase of study | 48 | 27 | 25 |

stated that their initial feelings towards children identified as underachievers were of a positive nature, while 42 percent had no feelings or were uncertain. Eleven percent felt that their initial response to the underachievers was hostile. In response to the question asking them to note any changes in attitude as a result of their work with these subjects, 48 percent noted a change in a positive direction, while 25 percent noted a negative development. The remaining 27 percent stated that there was no change. As cited earlier, descriptive studies of these subjects indicated that underachievers before counseling were less likely to be liked by teachers. These questionnaire responses emphasize the seriousness of this problem when one fourth of these teachers report that they felt even more hostile to the underachiever after working with the child, his parents, and the counselor for one year.

In explaining their comments, teacher responses fell into certain patterns. Those with initial neutral feelings often commented that they felt the same about all their children or that they accepted them all as individuals. Typical positive feelings were often explained by statements reflecting an interest, a challenge, or a sense of discovery in their work with these learning problems. Negative comments suggested that some teachers found underachievers as lazy, or attention seeking, and that they most often responded with hostility or annoyance to these behaviors.

Positive changes that occured during the counseling period most often reflected a pride that reflected some felt change in behavior or development; many commented on how they became more sympathetic or understanding as they more clearly understood the child and his reasons for behaving as he did. One unsolicited testimonial was mailed by a fifth grade teacher during the course of the study. She states:

> "John's reputation as a lazy, listless pupil arrived at my door before he did. My own attention had been drawn to his bored pout as he passed through the halls. A fearful premonition of dislike accompanied the thought of becoming his fifth grade teacher.
>
> Realizing that he might have problems served as a challenge, however. So, as I sought to help him develop some individuality as well as to draw him into his peer group, I began to understand some of the reasons for his behavior. Knowing brings understanding, and I can gladly say that my closer interest and the little added time I took to work with the child rewarded me with a sense of accomplishment and a genuine liking for the boy as opposed to my earlier prejudice. I imagine this principle could apply in many cases."

This was, of course, exactly the premise of the investigators; child study would create acceptance and understanding in the adult making the effort. However, not all teachers saw it that way. Those suggesting negative changes in their own feelings towards the underachievers cited the frustrations of not seeing appropriate growth in their students or facing uncooperative or hostile parents who stymied their efforts. Analysis of these responses then suggests at least two major reasons for attitude change: reaction to development or lack of it in the child; and understanding and acceptance arising from intensive study of the child and his environment.

A second set of questions on the evaluation questionnaire dealt with the relationship of the teachers to the guidance team. The researchers stressed an adult-centered approach to guiding the underachievers and the degree of rapport and confidence existing between these parties should be a significant factor in any outcome from these efforts. The teachers were first asked how they initially felt to the counselors. As indicated in the Table 4.6, 74 percent of the teachers indicated a positive attitude towards the counselors while 17 percent suggested they had hostile feelings. Another 9 percent indicated a neutral or ambivalent response to the investigators.

Table 4.6. Teacher Evaluation of Initial Response to the Counselors and Direction of Change Through the Counseling Phase of Study

| | Percent Positive | Percent Neutral or No Change | Percent Negative |
|---|---|---|---|
| Initial response to counselors | 74 | 9 | 17 |
| Direction of changes after counseling phase | 38 | 49 | 13 |

Teachers were also asked how these feelings changed over and through the period during which they worked with the guidance team. Forty-nine percent indicated that there was little or no change in their relationship while 38 percent suggested that the relationship moved from an ambivalent or negative position to a positive relationship or from a positive to an even more positive feeling towards the counselors. Nine cases or 13 percent did indicate a negative trend in the development of their feelings. They all moved from positive or ambivalent feelings towards a more negative position.

In their responses to a follow-up question asking for an explanation of these ratings as they related to the techniques and philosophy of the investigators, certain patterns were noted. Many teachers felt that there were too many demands on the classroom teacher for extra time; some rejected the concept of singling out a few children for special help. Other criticisms dealt with methods of the counselors such as one teacher's statement that "the counselors were too far from the classroom to understand the problems of these children", or remarks suggesting that conferences were poorly conducted or that too many people were administering tests. Positive evaluations also fell into certain patterns or categories: many suggested that this study helped teachers develop interest and knowledge about students; some noticed an increased interest on the part of parents as a result of this counseling; and many teachers indicated that they were able to develop positive personal relationships with the counselors, such as finding them "cooperative and helpful," "open-minded," and "considerate and sympathetic of the teacher."

Distinct differences developed between the La Crosse teachers and those in the outlying schools in their attitudes and relationships towards the counseling team. For example, nine cases, or 60 percent of those teachers with initial negative reactions to the counselors were from the La Crosse system. Five of these reported no change in their relationships as a result of working with the counselors. However, the four teachers from out of the city whose first reaction was negative all changed to a positive position during the counseling relationship. For the 13 percent of the teachers who moved in a negative direction during the counseling period, 8 out of 9 cases were La Crosse teachers. It should be noted that the total number of teachers from La Crosse was almost exactly the same as those from out of the city. ( La Crosse = 65; other = 63 )

Data comparing the development of experimental subjects from outside of La Crosse with those from La Crosse schools on the nine variables where direct comparison is possible are shown in Table 4.7. On eight of the nine variables experimental subjects from out-of-city schools showed more developmental increment between the pre- and post-tests than did students from La Crosse. Only on the vocabulary sub-test of the Iowa Test of Basic Skills did La Crosse counseled students show more gain over the three years than did the out-of-city subjects. Analysis of variance procedures, however, indicated that these differences in increments between the two groups of experimental subjects did not reach the .05 percent level of confidence. It does suggest an hypothesis that needs further testing. The results of counseling (as defined in this study) may well vary with the degree of acceptance of the counselors by the teaching staff. In this study the investigators thought they sensed hostility on the part of many teachers in one of the school

Table 4.7. Comparative Pre- and Post-test Increments between La Crosse and Outlying School Experimental Subjects

| Criterion Variables | La Crosse Experimentals | Out-of-City Experimentals | Increment Differential |
|---|---|---|---|
| ITBS Vocabulary | 3.47 | 3.30 | .17 |
| ITBS Reading | 2.93 | 3.38 | .45 |
| ITBS Language | 2.81 | 3.44 | .63 |
| ITBS Study Skills | 3.43 | 3.51 | .08 |
| ITBS Arithmetic | 2.46 | 3.25 | .79 |
| ITBS Composite | 2.82 | 3.38 | .56 |
| Sociogram-Best Friend | -.05 | 1.48 | 1.53 |
| Social Distance Scale | -.05 | .16 | .21 |
| Teacher Distance Scale | .33 | .54 | .21 |

systems. Questionnaire responses elicited in a follow-up study confirmed the existence of somewhat greater hostility existing before and developing during the counseling period in this same school system. The subsequent development of experimental subjects in the city where this negativism existed showed less increment than for the group counseled in other school systems. Experimental study with more sophisticated instruments for assessing teacher attitudes is needed to confirm or reject this hypothesis. If this is a variable influencing counseling success, quick termination of cases is one logical step where the counselor senses hostility or apathy in his relationship to the classroom teacher. Counselees may even be hurt by the negativism a teacher might transfer from the counselor relationship to the child.

Teachers were also asked to evaluate the child study and guidance procedures used in the Co-operative Guidance Study. Twelve separate items were listed and teachers could check any one of five categories: helpful, adequate, insignificant, harmful, or no contact. The results of this survey are presented in Table 4.8. The percentage of teacher responses in the harmful category were low, reaching a high of 4 percent for personality inventories. The four highest percents in the insignificant column were sociometric testing (16), sentence completions (16), tutoring (22), and gifts of books and hobby materials (20). Conferences with parents (83) and summer school programs (79), along with intelligence (86) and achievement testing (87) received the highest percent of helpful responses from teachers.

Parents of experimental subjects also responded to a mailed questionnaire asking them to evaluate the Co-operative Guidance Study. Sixty-one out of sixty-four parents, or 95 percent, completed and returned their questionnaire; this percent of return should eliminate almost completely the distortion resulting from interpretation of incomplete returns. When

Table 4.8. Percent of Teacher Evaluations for Child Study and Guidance Procedures

| Child Study or Guidance Procedure | Helpful | Adequate | Insignificant | Harmful |
|---|---|---|---|---|
| Individual intelligence tests | 86 | 7 | 6 | 1 |
| Achievement tests (use of profiles, interpretation to parents and children, etc.) | 87 | 8 | 5 | 0 |
| Sociometric tests | 60 | 22 | 16 | 2 |
| Sentence completions | 52 | 32 | 16 | 0 |
| Personality inventories | 61 | 25 | 10 | 4 |
| Tutoring of individual children | 62 | 14 | 22 | 2 |
| Staffings among professionals (teacher, counselor, principal) | 59 | 36 | 5 | 0 |
| Conferences with parents (teacher, counselor attending) | 83 | 14 | 3 | 0 |
| Summer school attendance by child for enrichment or remediation | 79 | 15 | 4 | 2 |
| Gifts of books, hobby materials, etc. | 58 | 22 | 20 | 0 |
| Interviews with children by the counselors or teacher | 68 | 24 | 6 | 2 |
| Child's attendance at parent-teacher conference | 64 | 11 | 8 | 17 |

asked to check and describe their feeling towards the program, 66 percent indicated it was an important help to them and 28 percent evaluated it as somewhat helpful. Six percent checked that the program had good and bad points. No parents responded by saying that they wished their child had not participated.

Comments written in support of their evaluations reflected a number of types of help as seen by the parent. Many parents commented about an improvement in school achievement and classroom work. They had noted that performance had improved in schools but also noticed more confidence, concern, and interest in school work. Some parents reported improved relationships with other children: the child had acquired new friends; one reported greater self-assurance and leadership in her child; and another felt that the child was not as afraid to meet new people. One parent, however, stated that, "Jeff has no friends." "He feels all the children hate him."

Parents saw improvement at home. Thirteen parents commented that the children were more likely to accept responsibility. Five saw less resentment towards other siblings. Not all saw progress at home, of course, and lack of responsibility and conflict with siblings were the most important sources for their criticisms.

Parents also evaluated the effectiveness of various procedures used in the guidance program by checking yes, no, or uncertain for each category. Some parents chose not to respond to certain items. The results of this survey in percents are presented in Table 4.9. Individual attention of the teacher (81), parent-teacher conferences (84), summer school programs (74), and gifts of books and hobby materials (61) all received more than a 50 percent response as helpful aspects of the program. Tutoring (15) and

Table 4.9. Percent of Parent Evaluations for Child Study and Guidance Procedures

| Child Study or Guidance Procedure | Helpful | Not Helpful | Uncertain | No Answer |
|---|---|---|---|---|
| 1. Individualized attention of teacher | 81 | 0 | 13 | 6 |
| 2. Parent-Teacher-Counselor conferences | 84 | 13 | 0 | 3 |
| 3. Summer school program | 74 | 6 | 10 | 10 |
| 4. Tutoring | 26 | 15 | 27 | 32 |
| 5. Gifts of books, hobby material, etc. | 61 | 3 | 19 | 17 |
| 6. Testing and interpretations | 45 | 0 | 26 | 29 |

parent-teacher conferences (13) received the greatest percent of not helpful checks. It is interesting that the testing program, often a controversial part of the school curriculum, did not receive a single negative check from these parents.

While the parents had opportunity to comment on each of the six items listed in Table 4.9, they focused their evaluation on those aspects of the program relating to the role of the classroom teacher and to the summer school programs. For example, the individualized attention of the teachers received a very positive evaluation from the parents. They saw their children responding to this attention with more motivation, better listening habits, and with an enhanced self-concept. They reported improved avenues of communication between the child and his teacher. One parent remarked, "He is more willing to ask for help when he doesn't understand."

Comments about parent-teacher conferences suggested that parents often discovered and learned much that they did not know about their children, and that this knowledge led to more realistic expectations on their part and also to a better understanding of the child. Parents found that their children often behaved much differently in school than at home. Another stated that her daughter developed a feeling that her parents were "on her side" because of the interest they showed by going to conferences.

Summer school was a touchy question in some families: some parents felt that children needed a long vacation; others felt it stigmatized their child; and some thought it would conflict with family plans. The 74 percent approval of the activity suggests that many parents ultimately came to value and accept this individualized attention: they suggested it helped develop skills; their children found new friends and a broadened outlook; and that it stimulated intellectual curiosity. A small number of parents felt that summer school alone succeeded in changing the development pattern of their child.

Parents were asked as the final question, "If you turn the clock back three years, knowing what you now know, would you want your child to be in such a research guidance program now?" Ninety percent of the parents responded with a yes and only 3 percent with a no. Seven percent recorded themselves as uncertain. In commenting on why they would want their child to be in such a guidance program another time, parents found much to say of a positive nature. One parent stated, "He gained more from his studies, learned better study habits, goes ahead on homework without being told, and enjoys studies more." Another stated, "I feel sort of helpless not knowing how to help him, but it gives me a good feeling to know that someone better qualified cares." The researcher, in moments of despair, could always find some solace in a review of these overwhelmingly favorable responses. While there is little statistical evidence that the underachievers profited from counseling, there at least is documentation of the good will and public relations this program created between schools and parents.

## B. Descriptive Studies

A subsidairy purpose for this investigation was to accumulate descriptive data about performances and development of children as they progressed from grade school through high school graduation. Data such as this can help teachers and parents understand some of the developmental needs of their children and can help school personnel in particular to evaluate some of the methods of instruction and evaluation instruments used in educational programs. These data represent a number of areas of human development and may suggest re-evaluation of certain programs and assumptions made by school personnel.

### 1) Validity of Three Group Tests of Intelligence

School systems in West Central Wisconsin use a number of the more widely used group intelligence and achievement tests. In the Cooperative Guidance Study, ten school systems (Bangor, Cashton, Holmen, La Crosse, Onalaska, Sparta, State Road, Viroqua, Westby and West Salem). permitted the investigators to test and follow-up the performance of approximately 1000 children from their fourth through seventh grade years. Data from this research study can provide some basis for the selection and interpretation of these instruments, particularly on the prediction of later academic performance. In the initial screening of subjects to identify underachievers the investigators used whatever group test of intelligence was being used in the fourth grade of the respective school systems. Underachievers were then identified from a population of 1078 subjects based on the group IQ score and the composite score on the Iowa Test of Basic Skills.

A study of the performance of these children from these West Central Wisconsin schools suggests that this group scored much higher on standardized tests of achievement and intelligence than norms for the respective tests would suggest. As presented in Table 4.10 the mean achievement for 922 non-repeating subjects on the Iowa Test of Basic Skills is 4.8192; the chronological grade placement of these children at the time of test administration was 4.1. This means that the mean achievement of these students was approximately .7 of a grade above grade level. The mean IQ's on all three group tests administered to these fourth graders was above 100 and for the Primary Mental Abilities Test, which was given to better than three out of every four subjects, it was over 114. Medians for all three tests were all within one or two points of the means.

Table 4.10. Mean Scores of Children Beginning Fourth Grade on the Iowa Test of Basic Skills and on Group Intelligence Tests

| Group Intelligence Test | Number of cases* | Mean IQ | Mean Composite Grade Level on I.T.B.S. |
|---|---|---|---|
| Lorge-Thorndike (Verbal) | 95 | 105.16 | 4.58 |
| SRA Primary Mental Abilities Test | 754 | 114.62 | 4.83 |
| California Mental Maturity Test (Short) | 73 | 111.11 | 5.02 |
| Total | 922 | | 4.82 |

*Fourth grade children who have repeated one or more grades are not included in these groups. The mean IQ for 83 repeaters was 95.6 on the Primary Mental Abilities test and mean PMA IQ for all fourth grade subjects including repeaters was 112.73.

One important use of intelligence tests is in predicting achievement whether it be a standardized test of achievement or teacher marks.

Pearson Product Moment correlations were computed for each group intelligence test as it relates to the fourth and seventh grade composite grade level scores of the Iowa Test of Basic Skills. Table 4.11 suggests that the Lorge-Thorndike (Verbal) Test of Intelligence has the highest predictive validity of the three tests for the composite grade level score on the Iowa for both fourth grade and seventh grade performance.

Table 4.11. Correlation Coefficients Between Group Intelligence Tests and the Fourth Grade Iowa Test of Basic Skills Composite Scores

| Group Test of Intelligence | Number of cases | Correlations with 4th grade ITBS | Correlations with 7th grade ITBS |
|---|---|---|---|
| Lorge-Thorndike (Verbal) | 95 | .903 | .870 |
| SRA Test of Primary Mental Abilities | 754 | .749 | .774 |
| California Test of Mental Maturity (Short) | 73 | .574 | .678 |

In many ways the relationship between intelligence tests and classroom grades is even more important than that with achievement testing. Classroom grades are an important evaluation of learning in a particular subject for both students and parents. Correlations were computed between group intelligence test scores given in fourth, fifth and sixth grade and the grades earned in seventh grade in three selected subjects: Science, Mathematics and English. (A random sample of every fifth subject was drawn for this comparison).

As can be noted in Table 4.12 the correlations for the Lorge-Throndike with each of the school's subjects is higher than for that of the

Table 4.12. Correlation of Performance on Group Intelligence Tests to 7th Grade Classroom Performance

| Group Test of Intelligence | Number of Cases | Science Grades | Math Grades | English Grades |
|---|---|---|---|---|
| Primary Mental Abilities (4th grade) | 163 | .54 | .46 | .39 |
| California Test of Mental Abilities (6th grade) | 81 | .47 | .41 | .31 |
| Lorge-Thorndike (fifth grade) Full Scale | 159 | .64 | .51 | .55 |

other two tests and in each case the California Test of Mental Maturity has the lowest correlation. The correlations for even the Lorge-Thorndike are not particularly high accounting for about 45 percent of the error beyond chance in predicting science grades. In contrast the California Test of Mental Maturity accounted for approximately 10 percent of the error beyond chance in predicting seventh grade English performance.

Often times teachers or counselors have used group tests of intelligence as a screening tool or an economical substitute for an individual test of intelligence such as the Stanford-Binet or the Wechsler Intelligence Scale for Children. The investigators re-tested all 180 subjects originally identified as underachievers by use of the Iowa Test of Basic Skills and group intelligence test scores. This re-testing was done with the WISC, (Wechsler Intelligence Scale for Children) an individual test of intelligence administered by a specially trained and certified psychometrist. The correlations of the three group tests to the WISC scores of underachievers are presented in Table 4.13. Most subjects received three group tests of intelligence during this longitudinal study; the investigators continued to

Table 4.13. Correlation of Group Intelligence Tests to the Wechsler Intelligence Scale for Children

| Group Test of Intelligence | Grade Administered | Number of Cases | Correlation Coefficient |
|---|---|---|---|
| Primary Mental Abilities | 4 | 149 | .74 |
| Lorge-Thorndike Full-Scale | 4 and 5 | 169 | .71 |
| California Test of Mental Maturity | 6 | 94 | .56 |

**administer these tests after the identification of underachievers was accomplished to provide the type of analysis provided in this report. The relatively high correlation of the Primary Mental Abilities test to the WISC is consistent with the results of the evaluation studies of the La Crosse Public Schools. They also have found the PMA to have the highest correlation coefficients with individual tests of intelligence and administer the test regularly in their elementary school program. It should be noted that the Lorge-Thorndike correlation is comparable to that of the PMA, both tests accounting for about 50 percent of the prediction error beyond chance.**

**One of the most perplexing and difficult decisions for a school administrator concerns the selection of intelligence tests and the time and place at which they are given. Many experts in the field of psychological testing would recommend the middle school years (fourth, fifth and sixth grade) as being almost ideal times to evaluate the academic potential of students through intelligence tests. The data collected through the Cooperative Guidance Study offer extensive evidence relative to the respective merits of three widely used group intelligence tests. The Lorge-**

Thorndike stands out from the other two in its ability to predict achievement on both standardized tests of achievement and in school grades. In addition, group intelligence tests are often used to identify children who as underachievers or who need special grouping classes for the mentally retarded. Both the Lorge-Thorndike and the Primary Mental Abilities test have demonstrated a reasonably high correlation with the results of an individual test of intelligence and can be used with some degree of confidence by administrators and specialists.

2) Prediction of 7th Grade Performances

One fascinating problem in analyzing development of youth is that of predicting human development and performance from collected data. Because so much descriptive data was elicited in this research study it was possible to relate development or performance in one area of development to the later performance in other areas. One interesting area for this type of evaluation is a prediction of classroom grades in various subjects. As criterion variables for this evaluation, the investigators took 7th grade classroom grades in the following subjects: English, Math, Social Studies, Science, and Physical Education. As the predictor variables the following performances were selected: age; composite score on the 4th grade Iowa Test of Basic Skills; sub-test scores on the same test in areas of vocabulary, reading, language, work study skills, and arithmetic; developmental level on the Wetzel-Grid from the 4th grade; Lorge-Thorndike I.Q.; and social distance scores from a fifth grade sociometric scale. The means and standard deviations for both predictor variables and criterion variables are presented in Table 4.14. Marks were recorded on a 5 point grading scale, with an A comparable to a 5, B to a 4, etc.. The age variable was translated into a number system where the youngest child in the modal grade range was given a 1 for a November birthday, with earlier birth months designated by higher numbers. (October - 2, September - 3, etc..)

Table 4.14. Multiple Regression Analysis for Ten Variables

| Predictor Variables | Mean | σ |
|---|---|---|
| Age | 7.45 | 4.72 |
| Composite ITBS (fourth grade) | 4.77 (gr. level) | 0.97 |
| Vocabulary ITBS " " | 4.74 " " | 1.08 |
| Reading ITBS " " | 4.92 " " | 1.35 |
| Language ITBS " " | 4.91 " " | 1.20 |
| Work Study Skills ITBS " " | 4.67 " " | 0.93 |
| Arithmetic ITBS " " | 4.64 " " | 0.78 |
| Developmental Level (Wetzel Grid) | 91.2 | 18.9 |
| Lorge-Thorndike I.Q. | 108.10 | 12.59 |
| Social Distance | 2.48 | .60 |
| **Criterion Variables** | **Mean** | **σ** |
| English Mark (seventh grade) | 3.14 (C) | 1.19 |
| Math Mark " " | 3.05 (C) | 1.25 |
| Soc. Stud. Mark " " | 3.02 (C) | 1.19 |
| Science Mark " " | 3.04 (C) | 1.25 |
| Art Mark " " | 2.25 (C) | 1.82 |
| Physical Ed. Mark " " | 2.56 (C) | 1.87 |

The multiple regression analysis of the predictive validity of the variables described above was then computed.

Table 4.15 shows the regression coefficient for predicting final marks in English in grade 7. The validity coefficient for the entire battery of 10 predictors is .50, which represents an increase of .09 over the ITBS Language (4th grade) score alone and .14 over the ITBS Vocabulary score alone. Since these two predictors are highly correlated (r=.75), it is doubtful that combining them would improve the prediction much over that represented by Language alone (r=.41). However, since the entire set yields a validity

Table 4.15. Predicting Final Marks in Grade 7 (English)

| Regression Coefficients | | $r_{oi}$ | $r_{ii}$ |
|---|---|---|---|
| Age | .01488 | | |
| Composite ITBS | -.67500 | | |
| Vocabulary ITBS | .21860 | .36 | |
| Reading ITBS | .08080 | | .75 |
| Language ITBS | .35310 | .41 | |
| Work Study ITBS | -.02705 | | |
| Arithmetic ITBS | .15690 | | |
| Developmental Level | .00308 | | |
| Lorge-Thorndike I.Q. | .02816 | | |
| Social Distance | -.03796 | | |
| Constant | .06480 | | |

N = 710

R = .50

coefficient of .50, it is questionable whether the additional 9 variables are an efficient addition to the set. In any event, the multiple correlation coefficient of .50 is evidence of significant predictive validity.

The same analysis was made for predicting the mathematics marks in grade 7. Seven hundred and ten cases were available for this analysis with complete data available for performance in all the criteria and predicted variables. Table 4.16 summarizes the regression coefficients for the entire set of variables. A validity coefficient of .50 represents an increase of .05 for the entire set over that for the ITBS Arithmetic alone. It appears that final marks in grade 6 mathematics can just as

Table 4.16. Predicting Final Marks in Grade 7 (Mathematics)

| Regression Coefficients | | $r_{oj}$ | $r_{ij}$ |
|---|---|---|---|
| Age | .02664 | | |
| Composite ITBS | -.41250 | | |
| Vocabulary ITBS | .17190 | | |
| Reading ITBS | .02706 | | |
| Language ITBS | .15180 | | |
| Work Study ITBS | .00683 | | |
| Arithmetic ITBS | .33150 | .45 | |
| Developmental Level | .00325 | | |
| Lorge-Thorndike I.Q. | .03642 | | |
| Social Distance | -.02161 | | |
| Constant | -2.07600 | | |

N = 710

R = .53

readily be predicted from the ITBS Arithmetic score alone.

For the social studies grades earned in grade 7 by the subjects of the study, the validity of the entire battery of predictors as shown

Table 4.17. Predicting Final Marks in Grade 7 (Social Studies)

| Regression Coefficients | | $r_{oi}$ | $r_{ii}$ |
|---|---|---|---|
| Age | .01069 | | |
| Composite ITBS | -.47450 | | |
| Vocabulary ITBS | .22120 | .39 | |
| Reading ITBS | .10560 | | |
| Language ITBS | .15770 | | .67 |
| Work Study ITBS | -.02081 | | |
| Arithmetic ITBS | .19670 | .40 | |
| Developmental Level | .00364 | | |
| Lorge-Thorndike I.Q. | .02514 | | |
| Social Distance | -.04343 | | |
| Constant | .07514 | | |

N = 710

R = .52

in Table 4.17 is evidenced by R = .52, which represents an increase of .13 over vocabulary alone and .12 over Arithmetic alone. High correlation of .67 suggests that combining Arithmetic and Vocabulary as a predictor set of two would not significantly enhance the predictive validity over that indicated by the ITBS Arithmetic score alone.

As indicated in Table 4.18, investigation found again that the prediction of Science marks by one of the predictor variables was quite close to that of the multiple regression coefficient. The predictive

Table 4.18. Predicting Final Marks in Grade 7 (Science)

| Regression Coefficients | | $r_{oi}$ | $r_{ii}$ |
|---|---|---|---|
| Age | .00907 | | |
| Composite ITBS | -.00595 | | |
| Vocabulary ITBS | .06510 | | |
| Reading ITBS | .05647 | | |
| Language ITBS | .00684 | | |
| Work Study ITBS | -.09051 | | |
| Arithmetic ITBS | .27150 | .45 | |
| Developmental Level | .00467 | | |
| Lorge-Thorndike I.Q. | .02715 | | |
| Social Distance | -.03248 | | |
| Constant | -1.01600 | | |

N = 710

R = .53

validity is evidenced by R = .53 which represents an increase of .08 over the ITBS Arithmetic test alone. It appears that final marks in grade 7 science can just as readily be predicted by Arithmetic scores alone.

The final subject analyzed was Physical Education and as indicated in Table 4.19, very low predictive validity coefficients were found for all the variables. It's surprising that the developmental level on the Wetzel-Grid, which represents a scattergram placement of height and weight data in reference to longitudinal development, still has a very low predictive relationship to grades earned in Physical Education at a later time. Low predictive validity is likely due to the relatively low grades assigned in Physical Education. (Average grade = D).

Table 4.19. Predicting Final Marks in Grade 7 (Physical Education)

| Regression Coefficients | | $r_{oj}$ | $r_{ij}$ |
|---|---|---|---|
| Age | -.00426 | | |
| Composite ITBS | -1.70200 | | |
| Vocabulary ITBS | .60500 | .13 | .81 (V-R) |
| Reading ITBS | .45060 | .12 | .67 (V-R) |
| Language ITBS | -.02858 | | |
| Work Study ITBS | .13980 | | |
| Arithmetic ITBS | .86580 | .16 | .72 (V-R) |
| Developmental Level | -.00078 | | |
| Lorge-Thorndike I.Q. | .00098 | | |
| Social Distance | -.01961 | | |
| Constant | 1.55800 | | |

N = 710

R = .24

Moderate validity of the battery of predictor variables has been demonstrated for predicting 7th grade marks in the academic subjects of English (R = .50), math (R = .53), social studies (R = .52) and science (R = .53). Little or no validity is evidenced by the battery in predicting final grades in the non-academic subjects of Physical Education. This latter result is, no doubt, due in part to the low grades, on the average, received in these subjects by the students in the sample. It is further noted by inspecting the relative magnitude of the regression coefficients that the predictive validity of the battery against the criteria of final marks in grade 7 is contributed to primarily by only 3 tests of the Iowa Tests of Basic Skills: namely, vocabulary, language and arithmetic. All the other predictor variables, with the exception of the ITBS Composite score which yields substantial negative weight, contribute very little to the variance of the criterion marks.

## V - CONCLUSIONS AND IMPLICATIONS

The follow-up study of the experimental and control underachievers who had been counseled for 3 years suggests that the need for counseling was not fully met for these subjects. The underachievers, as a group, had not attained a comparable state of development to a comparison group of achieving students as identified when the study began.

An analysis of the performance of experimental and control subjects found that differences between these groups did not reach the 5 percent level of confidence for any of the 12 variables used as an evaluative criteria. On 10 of the 12 variables the experimental group out performed or had less problems than did the control subjects. The 10 percent level of confidence was reached for 5 of these categories.

Questionnaires submitted to the parents of counseled subjects elicited data suggesting that parents saw progress in the development of their children and that they looked with favor upon the counseling activities as conducted by the investigator. Every parent felt that his child had been helped and 90 percent would willingly have their child participate in the counseling program if the clock were to be turned back to when this investigation began.

Teachers responded to the experimental subjects and to the counseling team with both positive and negative feelings. Data collected in this investigation suggest that counseled children respond best where the teacher-counselor relationship is positive. This is a variable that needs further investigation.

This research does not contribute much to the old dilemma facing counselors and psychologists; there is little statistical evidence in the literature that counseling significantly changes the development for groups of counseled students. Perhaps investigators are unrealistic in trying to adhere to the 5 percent level of significance in evaluation studies such as this. Counselors logically can't expect to succeed with all cases. Ultimate evaluation of their work may rest with the question, "Does success with a few cases justify the time and money spent for this program?" The many unsuccessful cases are at least partly responsible for a dilution of data making it unlikely that a high level of statistical significance can be reached.

Other investigators could profit by noting two design problems this research encountered. The first dealt with adequate controls. The investigators encouraged the cooperating school systems to limit their services to control subjects but this proved ineffective. It became obvious that these students, too, were being referred for other services and programs including remedial reading, tutoring, or work with a school social worker. Any future counseling research conducted by this investigator would include more rigid controls, particularly a carefully spelled out agreement with school systems preventing any referral of control subjects to any person or program offering individualized contacts or experiences beyond the classroom setting.

The second suggestion deals with the role of an outsider in a school setting. Counseling success with young subjects is probably most dependent on the establishment of good rapport with the adults involved. The counseling team often felt in this investigation that it took the full year to establish a working relationship with the teacher and by that time the child was moving on to the next classroom and grade. We would hypothesize that had these personal relationships been established before this investigation began, or had the teachers referred these cases to the specialist for help rather than having the counselor identify the underachiever, the counseling itself would have been much more successful. Perhaps it is a rationalization, but these problems that developed in human relationships suggest that the design did not offer a fair test for either the teachers, counselors, or the philosphy and techniques used. In any case, the writer is convinced that success in elementary school guidance programs is less dependent on knowledge of techniques or child study procedures, than it is related to the counselors' ability to relate positively to the parents and teacher of the child.

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